

FILE

ALL THE NEWS  
of the  
WEST COAST COMPUTER FAIRES

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# SILICON GULCH GAZETTE

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Computer Faire, 333 Swett Road, Woodside CA 94062

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## 12-16 Kilopeople Expected at Faire

The 4th West Coast Computer Faire appears likely to be the largest microcomputing convention yet to occur. Faire organizers are expecting 12,000 to 16,000 or more to attend the Faire during its three-day weekend convention. These estimates are based on a variety of data points:

- two years ago, in San Francisco, the First West Coast Computer Faire drew almost 13,000 computer enthusiasts,
- the 2nd Computer Faire, held in San Jose - 60 miles south of San Francisco - over a year ago, drew over 14,000,
- due to a 137,000-copy *Business Edition* being sent to northern California business people, a considerable number of people, new to microcomputing, are expected to attend the Faire for the first time, seeking solutions to their business and government reporting problems,
- the entire consumer computer market has grown, significantly, since the last San Francisco Computer Faire,
- and last, but not least, it's being held in *San Francisco* at an ideal time of the year.

## MELODIOUS MICROS

### Play An Orchestra

In "Learn to Play an Orchestra," Cesar Castro and Allen Heaberlin will describe a new digital music synthesizer that can generate high-quality sound (32 synthesis channels, 16 programmable waveforms per channel), and that sells for under \$800. They will discuss the principles behind different kinds of music synthesizers, and explain their new synthesizer's design.

The speakers are associated with Casheab, 5737 Avenida Sanchez, San Diego, CA 92124.

### Percussion Music

In "Computer Controlled Percussion Music," Henry L. Pfister will describe a computer-controlled system for creating percussion music on analog 'instruments.'

IF

You receive more than one copy of Our Glorious Gazette,

THEN

You're obviously a true computer fanatic (oh joy!)

AND

are on more than one magazine mailing list.

PLEASE

Pass the extra copy along to a fellow Computer Enthusiast.



San Francisco Visitors Bureau Photo

**4th West Coast Computer Faire**  
San Francisco  
Civic Auditorium & Brooks Hall  
May 11 - 12 - 13, 1979  
Fri Sat Sun  
9am-6pm 9am-6pm Noon-5

## Computer Faire Has Massive Products Exhibition

Returning to San Francisco after a two-year absence, the 4th West Coast Computer Faire is shaping up to include the largest microcomputing exposition yet held. Faire organizers estimate that over 270 exhibit spaces will be filled with a wide variety of demonstrations of microcomputer products for home, business, and industry. (Two months prior to the Faire dates, over 210 spaces had already been rented, and more exhibitors were arriving daily.)

Exhibitors already contracted range from consumer manufacturers such as Apple and Atari, through personal computer makers such as North Star Computers and Southwest Technical Products, to companies addressing the small business market - e.g., Alpha Micro, and Midwest Scientific, to name a few.

There are a large variety of software producers. These range from complete disk operating systems such as CP/M from Digital Research, through business accounting and inventory control systems, to a wide variety of computer games and educational packages.

Other exhibitors are offering a wild selection of usual and unusual systems and subsystems - from low-cost color graphics systems and inexpensive hard-copy and soft-copy terminals, to speech synthesis units and electronic music systems.

The 4th Faire will fairly obviously be the largest of the Computer Faires, and that makes it the largest of all the microcomputing conventions that have been held in the past four years, i.e., since the inception of truly low-cost computing power for everyone - home, business, and industry.

## FOURTH FAIRE INCLUDES MAJOR CONFERENCE PROGRAM

As has been the case with the previous three Computer Faires, the 4th Computer Faire will include a major conference program. More than 90 speakers will discuss topics ranging from automated home energy management and microcomputer-based 'electronic newspapers' and computerized bulletin boards, through tutorials for business people and discussions of educational applications of micros, to detailed examinations of current developments in systems software and language design for micros.

Broadcast-based digital communications for a wide variety of general and special uses will be the topic of a special, major Faire conference section. This is

the first time this topic - the marriage of microcomputer-based information processing power with a means for inexpensive, massive data distribution has ever been discussed as the exclusive topic of a major computer convention's conference section. The section will include topics that have previously been discussed under such titles as "electronic newspapers" and "computerized bulletin boards." It will also include specific proposals and a report on the current status of the Digicast Project.

The Computer Faire will, once again, publish a complete *Conference Proceedings* - a collection of all the papers and abstracts that were submitted by speakers, backing up and supplementing their Faire conference presentations.

## Energy in the Home - Manage it with Micros

### Solar Simulator

J. Robin Donaldson and Mark Miller will discuss a "Microcomputer-Based Solar Simulator and Demonstrating Unit."

The speakers have developed a program that simulates the behavior of a small solar energy house on a microcomputer. It enables them to demonstrate solar energy principles and run simulations using the "house" as a model.

### Micros in Energy Management

Mark Miller will discuss "Microcomputers in Energy Management Systems." He will describe systems, built into two renovated houses, which use 6502s to control energy collection and consumption. Then he will speculate on the commercial home energy management systems likely to become available within a few years, and on other possible applications of such systems - in simulation, food production, and vehicle energy management.

### Dwelling . . . Redesigning

While we are designing computer systems to control the home environment, we should also be designing homes that are capable of being controlled efficiently by computers; as a result, we would get homes that are more hospitable for people as well as for computers. So says Dan Vance Kimball, a designer at Dwelling Design Network, who will argue for such an approach in "Dwellings . . . Redesigning Them to Support Life."

The speaker will discuss some of the criteria for designing an optimal dwelling and some features of designs based on these criteria. He will describe an 8080-based home management system that Dwelling Design Network has

developed as a component of such a house.

Dwelling Design Network is at Box 13860, U.C.S.B. Station, Santa Barbara, CA 93107.

### Home Energy Management

Fran Farrand will describe a proposed system for home energy management in "A Real-Time Operating System that Specializes in Home Energy Management." The system would use a microprocessor which polls sensors periodically and turns household devices on or off depending on what it finds. The microprocessor would not be heavily loaded by its home management tasks, and could be used for personal computing as well.

### Electrical Load Management

In "Electrical Load Management," A.I. Halsema will survey the need for more efficient use of electricity in homes, and the potential of microcomputers for meeting that need. He will detail several ways in which computerized load management can save energy, such as turning off unneeded appliances during peak load periods.

### Energy Conservation

Rising energy costs and declining computer costs are bringing us closer to the day when home energy management systems will be cost-effective; perhaps, necessary to our economic health. Jack Park will discuss some of the prospects in "Overview of Energy Conservation Possibilities Using Home Computers."

The speaker is concerned with the social aspects of energy management as well as the technical aspects. This means making people aware of the energy costs of their activities and habits, then inducing them to change their behavior.

# Microcomputer Potpourri: Variety Adds Spice to Faire

## Dissection Puzzles

Dissection puzzles are a part of topology which is largely unexplored. In "Solving Dissection Puzzles by Computer," David M. Collison will discuss some work he has done in this field.

A dissection puzzle begins with a polygon whose perimeter is colored. The problem is to cut up the polygon and rearrange the pieces to form a new polygon with the same shape, but no colored perimeter.

How many ways can a given puzzle be solved? Can it be proved that some puzzles are unsolvable? If a puzzle can be solved, how to find the minimum necessary number of cuts? The possibilities of this kind of puzzle are open-ended.

## Designing "Hospitable" Software

In "Ten Rules for Writing User-Oriented Programs," David H. Ahl, publisher of *Creative Computing*, will address the problem of designing software that is "hospitable." Hospitable software behaves sensibly, reacts tolerantly to input errors, and guides the user toward a successful completion of the task.

The principles Mr. Ahl will discuss include: making a program self-teaching, allowing for various levels of skill, and making appropriate use of color and animation.

## 'Programmer Drift'

Peter F. Zoll will address the problem of high employee turnover in data processing in "Programmer Drift: Symptoms, Causes, and Cures."

Turnover, or drift, has several bad effects on the employer (including loss of continuity, low employee loyalty, and high training costs for new personnel), as well as affects the employer's attitude toward data processing in general and programmers in particular.

The speaker suggests several things that can be done to reduce turnover, such as offering "company-centered" compensation (like stock options) and restructuring the workplace to offer more employee satisfaction.

## Connections Project

Technology has made our society highly mobile and nomadic, fragmenting many individuals' sense of community. In "The Personal Computer as a Social Tool," Tony Severa will discuss the Connections Project, which plans to use a personal computer to help integrate individuals back into viable social groups by acting as an 'information exchange' about shared interests and needed skills.

The speaker's organization, Synergetic Systems Unlimited, is currently proposing to set up the Connections Project under sponsorship of the Solano County Library in Fairfield, California.

## Curve Fitting Method

Dr. Endre Simonyi will describe "A New Fitting Method and Its Application." Dr. Simonyi's method is implemented in a Basic program; it can fit a set of points to several kinds of functions, and automatically choose the function that fits best.

## Medical Applications

Existing medical applications of personal computers generally center on accounting operations. Leo and Freny Berkenbile will describe a true medical application in "A Computerized Physical Examination for Use in a Physician's Office."

The speakers have developed an interactive program which guides a physician through a standard physical exam, calling his attention to matters he might otherwise overlook. At the end of the exam, it can print out a report in a format selected by the user.

## Computers for the Blind

Yvonne Russell will describe applications of the Talking Information Management System (TIMS-II), which permits blind people to use a computer by giving output in spelled-out speech.

TIMS-II is an attachment to the Hewlett Packard HP9825A desk-top computer.

TIMS-II enables the blind to use a computer for data retrieval, allowing them to perform jobs such as telephone and phone-information operators. It gives blind scientists and engineers access to computing power which they could not otherwise have.

In a separate session, Yvonne Russell and Susan Phillips will discuss "Employment Applications of Computer Related Sensory Aids for Blind and Partially Sighted Persons." Some of the aids they will mention are a telephone switchboard which uses computer technology to give status information to a blind operator; a character recognition device that can 'read' information aloud from a CRT screen; and a special CRT that displays oversized characters in several magnifications for low-vision users.

Ms. Russell is Engineering Coordinator for the Sensory Aids Foundation, a non-profit corporation dedicated to increasing the abilities and independence of the blind. Ms. Phillips is Employment Development Program Coordinator for the same organization. Sensory Aids Foundation is at 399 Sherman Ave., Suite 12, Palo Alto, CA 94306; (415) 329-0430.

## Replication

Wyn Kelly Swainson will present a talk on "Automation Begets Replication -- and a New Idea of Arthur C. Clarke's Appears on the Horizon."

Replication is a hypothetical process for reproducing arbitrary objects directly, in the same sense that a photocopier reproduces images on paper, or a tape recorder reproduces sounds. It would cause a revolution in the production of tangible goods, similar to the revolution in the production of information that has been caused by computers.

Replication may be divided into two processes: detecting the structure of an object, and duplicating that structure. A laser-based process called photo-chemical machining (PCM) makes the duplicating process feasible, and it is actually being used today in specialized applications.

The speaker will describe replication and PCM, and will discuss some of their implications both for the designers and producers of goods, and for society at large.

Mr. Swainson is associated with the Formigraphic Engine Corp., Sather Gate Station, Box 4262, Berkeley, CA 94704.

## Computer Crime

You should consider a career as a computer criminal, Jay Becker will say -- facetiously -- in "Computer Crime -- Career of the Future?"

The speaker's reasons for this proposal are: (1) no one will ever know if you commit a computer crime; (2) if anyone finds out, they won't tell; (3) if they tell, you won't be punished; (4) if you're punished, you'll probably come out ahead; and (5) you don't have to know a lot about computers to do it. Mr. Becker's real reason for speaking is to make business computer users aware of the potential for loss through computer crime, and to suggest some things they can do about it.

Jay Becker is a Deputy District Attorney in Los Angeles, and is the creator of the National Center for Computer Crime Data, an information bank for the benefit of people investigating or prosecuting computer crimes.

## Golemic Approach

The problem of controlling robots has not yet been solved very elegantly, and may never be. Lee Felsenstein will introduce "The Golemic Approach," an alternative to robotics which introduces a human into the computer/environment loop. The human's powers of perception and judgment are combined with the computer's talent for accuracy and speed, creating a single entity more powerful than either alone.

## Save Money: Make Your Flight Reservations Now (Maybe Even Organize a Group?)

By making early flight reservations to San Francisco for the 4th Computer Faire, you are likely to be able to take advantage of some "super saver" type air fares that are becoming increasingly available now that the government is reducing its protection of the air lines against competing with each other. If you even *think* you may be attending the 4th Faire, call your travel agent now!

You might be able to save even more: ask your travel agent to consider organizing a tour group to San Francisco and the Faire. If they're willin', the Faire will be happy to publicize the group in the *Gazette*, (but let us know ASAP).

## WEATHER IN SAN FRANCISCO

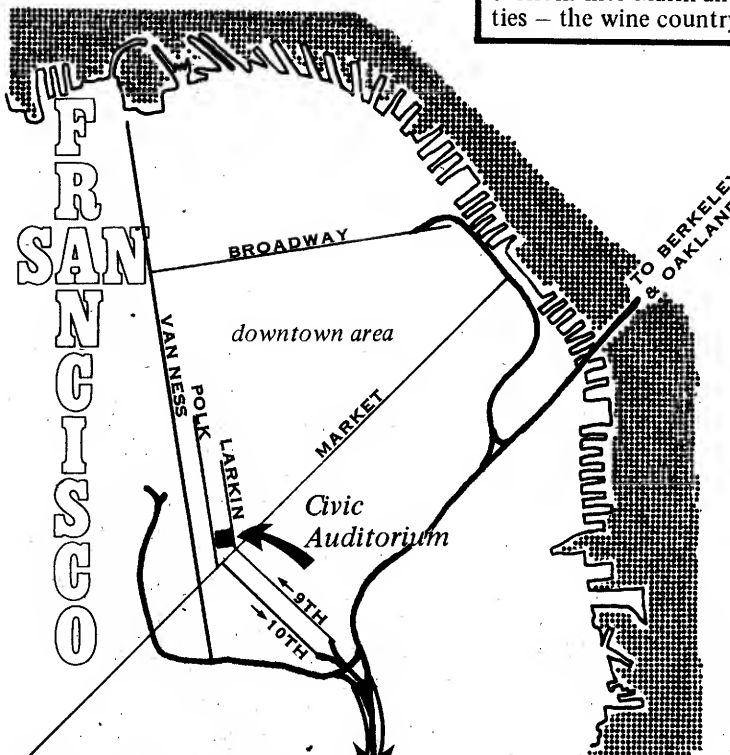
San Francisco's weather surprises many visitors. Summers are never very warm, and foggy nights and mornings are the rule. Winters are seldom cold, but in normal years, the rain comes then. The most sun and the warmest months are in the fall. But May, the month of the Computer Faire, is hard to put in a category. It can be warm or cool, wet or dry, windy or calm. At least, such are the generalities of the City weather.

All of this brings up the question of clothes. In general, the best rule is to dress basically for cool weather. Be prepared for cool weather mornings and evenings. Of course, "warm" and "cool" depends on personal thermostats. Obviously, this is not the kind of weather for shorts or resort-wear. And, there is no need for beach-wear. The ocean and Bay, year round, are too cold, except for the Polar Bear Club.

For men, light-to-medium jackets or suits are best, with some kind of all-weather coat against the evening chill, the possible fogs, and rain. Women will find the most comfortable clothes are knits, light wools, and worsteds, not cottons or silks. A scarf, umbrella, or raincoat might come in handy. For everyone, good walking shoes are important. San Francisco is small in area and has hilly streets, so it is a walker's place if the shoes for it are in the suitcase.

San Francisco is a very open city for clothes. Some restaurants do require coat and tie for men, but formality is not a must, and just about any dress is tolerated, from Levis to Cardin. Some local computer phreaks are betting that Jim Warren, Chairperson of the Faire, will not change his blue-jean style even for the banquets.

A few miles away, things change. Being a coastal site with a large bay and many hills, there are a number of microclimates around the Bay Area. North, east, and south of San Francisco away from the coast, all areas tend to be warmer than the City in spring and summer. Down along the Peninsula's bayside, temperatures may be in the 80's when it is 65 degrees in San Francisco. Fairegoers planning a visit to the Palo Alto or San Jose area -- Silicon Valley -- will find warmer weather. The same is true of visits to Oakland and Berkeley in the East Bay, as well as excursions into Marin and Sonoma Counties -- the wine country -- to the north.



101 FREEWAY DOWN  
SAN FRANCISCO, PENINSULA

## Telecommuting

In "Telecommuting Via the Personal Computer," Jack M. Nilles will discuss prospects for replacing 'physical' commuting from home to workplace with 'logical' commuting, in which one works at home through a computer and telecommunications channel.

The potential impacts of microcomputers on telecommuting will be examined, including effects on productivity, energy costs, and development of new service industries.

## Electronic Publishing

William Bates, editor of *The Computer Cookbook*,<sup>TM</sup> will speak on the subject of "Economic Advantages of Electronic Publishing."

Several electronic publishing services are already in commercial operation, Bates points out. Some are general information services, such as the New York Times Information Bank. Others are specialized services such as the medical and scientific indexes maintained on Lockheed's Dialog<sup>TM</sup> system. And then there are the "broadcast" data distribution systems, such as Digital Broadcasting Corporation's services and the British Post Office's Viewdata.

The speaker will discuss several of the present and proposed systems, including their future, economics, and prospects for expansion.

## Democratic Process

Limited access to information often makes 'democratic' institutions function in an oligarchic or autocratic way. In "Digital Broadcasting and the Democratic Process," David Sanders Stodolsky will suggest a way that an information network based on personal computers could promote truly democratic institutions by making information more easily accessible to the people who are interested in it, and more easily avoidable by the people who are not.

## Personal Computer Telecommunications

In "Personal Computer Telecommunications" Dave Caulkins will review the current state of the art in communication nets, pools, and similar structures using personal computers. He will discuss specific systems, their availability, advantages, and disadvantages.

Some of the systems the speaker will mention are: the Community Bulletin Board System, which lets anyone with a dial-up terminal access a regional information pool; PCNET, a distributed data communication network; the Digicast project; and amateur radio/personal computer hookups.

## Bit-Oriented Protocols

In "Bit-Oriented Protocols in Serial Data Transmission," Mitch Gooze will discuss a relatively new class of protocols for data communications which combines many of the advantages of asynchronous communication (code transparency, full-duplex operation) with bi-synchronous communication (efficient use of the transmission medium for high-speed communication).

Examples of bit-oriented protocols currently in use are the Advanced Data Communication Control Procedure (ADCCP), the ANSI standard; High-level Data Link Control (HDLC), the CCITT standard; and Synchronous Data Link Control (SDLC), the IBM standard.

Mr. Gooze works for American Microsystems, Inc., which manufactures an integrated-circuit device that can encode and decode bit-oriented protocol transmissions of all three types.

# Computers & Communications: Some Lively Horizons for Micros

## Videotex & Teletext

Consumer-oriented digital information services are a commercial reality in Europe, and promise to revolutionize the next century as the automobile has revolutionized this one.

In "Videotex and Teletext Systems: Consumer Information Systems of the 80's," A. Terrence Easton will discuss characteristics and implications of consumer information systems, with particular attention to two of the ones now in use.

## Two-Way Communication

Future mass media will offer a potential for two-way communication that was never possible with traditional media such as radio and television. Thomas P. Hill will explore that potential in "The Application of Two-way Communication Technology to Information and News Systems."

In conventional mass media, information is 'pushed' at the consumer by the producer. The amount of information is adjusted to fill a certain time slot, and arbitrary (or value-laden) choices are made in order to do so.

In two-way media, the consumer will 'pull' the information he desires out of a large pool. This will change both the kind of coverage the media gives to news and news-like topics and the way that the information they present is organized. The speaker will discuss what some of these changes will be, what effects they will have on the producer and consumer of information, and how two-way mass media may evolve to accommodate them.

## Closing The Loop

In "Closing the Loop on One-Way Broadcast Systems," John R. Pickens and Raphael J. Rom will discuss the potential for co-ordinating two new communication media that are developing out of computer technology: electronic mail and digital broadcasting.

A number of configurations are discussed, such as: electronic mail providing input to a digital broadcasting system; manual or automatic 'middlemen' notifying their customers by mail when information of concern to them is broadcast; information services broadcasting summaries of data at no charge; and mailing full-text on request at a charge.

## Amateur Radio

In "Enhancing Amateur Radio Through Computer Control," Leonard C. Silvern will discuss SEARCH, a microcomputer-based information system which aids communication between amateur radio operators.

The computer assists an operator in the technical aspects of making a contact, such as logging his activity to meet FCC record-keeping requirements. It also controls a group of microfilm and microfiche devices that give the operator quick access to maps, pictures, and other geographic material. This can provide him with starting points for a rewarding conversation with whomever he contacts.

The use of SEARCH appears to shift the content of radio conversation away from technical topics (transmitters, antennas, etc.) and toward social topics (local economies, schools, recreation facilities, transportation).

## Digicast Weather

Digital broadcasting with smart receivers could bring much more complete and timely weather information to people who need it, Dennis G. Baker will say in "Digicast Broadcasting of the Weather."

Digicast weather predictions could go into much more detail than conventional predictions, letting each Digicast receiver select the information its user is interested in. For example, a traveller could select forecasts for his destination; a boater could select marine forecasts; a hospital could select forecasts of events likely to cause deaths or injuries anywhere in its vicinity.

The speaker is an Associate Professor in the Department of Atmospheric and Oceanic Sciences at the University of Michigan, Ann Arbor.

## Green Thumb

David Wortendyke will describe "Project Green Thumb," an agricultural information service jointly sponsored by the Department of Agriculture and the Department of Commerce (National Weather Service).

Project Green Thumb provides farmers with a microprocessor that receives text and graphics via telephone, stores them, and displays them on a television set on request.

## Computer Mass Communications

Eric Somers believes that current proposals for computer-based mass communication are deficient, in that they would merely modify existing applications of computers and/or communications media. In "S-O-S to MOS - A Proposal for Computer Oriented Mass Communications," he develops a new system design from first principles.

The system characteristics Somers develops are: (1) Unidirectional communication; (2) Using low-speed radio transmission; (3) Several channels for servicing different needs; (4) A smart receiver giving the user a high degree of control over the information received; (5) A mass storage facility at the receiver, letting the user accumulate large amounts of information and manipulate it at high speed.

## Satellite

Mark Cummings will discuss the prospects for digital broadcasting by satellite in "Digital Broadcasting: A National Satellite Network of Digital FM SCA Broadcasts." Some of the topics he will touch on include objectives of the system; what SCA equipment will be like, and what it will cost; and what the FCC is doing about SCA regulation.

## Slow Scan Television

In "A Slow Scan Television System Using a Microprocessor," Clayton W. Abrams, K6AEP, will describe a system which permits amateur radio operators to transmit video signals in about 1/1000 the bandwidth used by commercial TV. The speaker has developed a slow-scan television system using a M6800 microprocessor and a few inexpensive analog interface cards. He finds it a vast improvement over earlier analog systems (the image quality of which was low) and digital systems (which were very complex and expensive).

## The Faire City of San Francisco

During your stay in San Francisco for the Computer Faire, there are endless choices for things to do and see in moments away from the booths and banquets. And, your family will not be at a loss if some of them do not want to catch every motherboard on display.

Children who are not surveying the video games can enjoy the Maritime Museum at the Hyde Street Pier. In addition to the museum itself, five restored old ships float nearby at the wharves; included are the three-masted schooner *Balclutha*, and a replica of Sir Francis Drake's *Golden Hinde*. The Exploratorium in the Palace of Fine Arts is a place where children of all ages can delve into science and technology, working many of the displays themselves. Out near Ocean Beach, Storyland at the Zoo is a fascination for young children, where there are animals to be touched and fed and entertained. In Golden Gate Park's thousand-plus acres, visitors can browse through Steinhart Aquarium or watch the stars in Morrison Planetarium.

For a small city, San Francisco is a shopper's dream. There are cookware stores specializing in French, Italian, and Chinese gastronomic tools; places to get fresh-roasted coffee; and ship-chandler stores with every boating accessory. Department stores, from the elegant Gump's to the chic Magnin's, are plentiful on and around Union Square. Union Street (which is not on, or even near, Union Square) contains many small shops, boutiques, and restaurants. For bargain hunters and seekers of the unusual, visitors look to Cost Plus, the warehouse full of the world's imports; the shops in the Cannery, which once was a cannery; and the stores of Ghirardelli Square, once a chocolate factory. Chinatown, along Grant Avenue, brims with food, clothing, novelties, artist's supplies, and window full of puzzling wares.

San Francisco's restaurants, always internationally known, are rated as the top attraction in the City. Here you can find Lebanese, Vietnamese, Peruvian, Indian, and Russian restaurants in addition to the French, Chinese, Japanese, Italian, and German fare. Night life, in the city where topless began, is just as rich in choices; some of it even includes clothed entertainers.

Outside the City, but nearby, Grayline and other sight-seeing services offer tours by bus. North of the City is Wine Country, home of the justly famous California wines, where you can taste and enjoy the environment of excellent wines. On San Francisco Bay, there are ferries, tour boats, and helicopters. One ferry can take you to Angel Island in the Bay for a walk and picnic, or there is a cruise boat with dinner on the Bay. Hikers can walk the Golden Gate Bridge or climb Mt. Tamalpais in Marin County.

Outside the Faire, but related to the hobby or personal computer industry, is the birthplace of the microprocessor, Santa Clara County, south of San Francisco on "the Peninsula." The massive semiconductor industry there has earned the area the nickname "Silicon Valley," and trips to some of the companies can be arranged. There are also a number of retail computer stores in the Bay Area.

## SCA Receiver Problems

In receiving a Subcarrier Communications Authority (SCA) signal, the main problem is rejecting the cross talk from the main-channel programming.

In "Subsidiary Communications Authority (SCA) Receivers and an Analysis of Some Receiver Problems," Edison J. Schow will discuss some of the causes of cross talk interference and suggest some possible cures.



# MICROS & SMALL BUSINESSES: A BLOSSOMING PARTNERSHIP

## Computer Store Illusions

Computer stores are tremendously interested in selling systems to small businessmen, and small businessmen are tremendously interested in buying. But the two groups aren't going to do much business together, Richard G. Lawrence believes. In "Computer Store Illusions in the Business Market," he will explain why.

The typical computer store owner has a lot of expertise with computers, but little with business. He is not able to follow the subtleties of business system design. He is neither trained nor financed to provide the level of technical support most small business systems must have.

"What does the business man really want or seek? The businessman doesn't want a piece of hardware or software. He wants a solution to a problem. He wants a working system. A system that he can go out and plug into the wall and conceivably have working the next day at solving his business problems." Until computer stores can provide that, they don't get access to more than a fraction of the potential market.

## Proposal Simulation

Dr. David M. Chereb will discuss "A Simulation of Proposal Strategies" that can be run on a small business computer. The simulation is a program that assigns weights to various features of a contract proposal — quality of product, speed of production, etc. — and arrives at an "optimum" compromise between conflicting factors that should be the most attractive to the customer.

## General Accounting

Chuck Bradley of Byte of Palo Alto will speak on "Selecting General Accounting Software" at the Fourth West Coast Computer Faire. His talk will be directed toward the first-time purchaser of a small business computer who wants help in choosing among the 50 or so accounting packages now on the market.

"Making a proper choice of accounting software is more important than the hardware decision," Bradley asserts. "The software is that part of the system which actually performs the required task; it is the primary interface between you and the computer hardware."

Bradley's talk will outline four steps to follow in selecting an accounting system, and will discuss some criteria to use in evaluating the possible choices.

## Evaluating Business Software

In "Evaluating Business Software," Greg B. Scott, editor of the *Business Computing Review*, will point out certain characteristics that any well designed software package must have, such as adequate documentation, ease of use, and audit trail facilities. He will also discuss the minimum functions that must be present in specific business applications such as accounts receivable, payroll, and inventory.

## Medical Billing

In "Detailed Medical Billing," Andrew L. Bender, M.D., will describe a system which handles billing for a small medical practice. He will discuss the design of the system, the file structure used, and a user's experience in the office where the system was introduced.

The billing system runs on a 48K microcomputer that supports Microsoft Extended Basic, with disk, printer, and CRT.

## Painless W-2s

Every January, most small employers get headaches from making out W-2 statements by hand. Small business computers can make the job easier — especially if the statements can be sent to the Federal government on machine-readable media instead of paper.

Jere J. McEvilly of the Social Security Administration will explain how to do "W-2s the Easy Way," citing chapter and verse on many Federal requirements for machine-readable media and data formats.

## History of Business Software

In "Historical Development of Business Software," Irwin Taranto will review business software development from the birth of commercial computing to the present. He will point out some of the numerous pitfalls that earlier programmers encountered, in the hope that we can learn from them and avoid repeating their mistakes.

## Software Dilemma

William J. Schenker, M.D., will discuss "Software for the Business Professional: A Growing Dilemma."

Dr. Schenker's dilemma is that while hardware costs are plunging, software costs are rising, and will eventually become the limiting factor in computer utilization. Meanwhile, software remains unreliable and difficult to modify.

The solution Dr. Schenker sees is the development of a high-level programming language that would allow non-professional programmers to develop 'homemade' software easily, quickly, and reliably. In his talk, he will detail 13 characteristics he considers essential in such a language.

## Moody to Chair Computer Dealers' Meeting During 4th West Coast Faire

Bob Moody of Byte of Palo Alto, and President of the Western Computer Dealers Association, will chair an open meeting of computer retailers during the 4th Computer Faire. The meeting will be held immediately following the Retailers' Show, which will take place Sunday morning, May 13th. The retailers' meeting will take place in the Civic Auditorium, beginning at noon, May 13th. Individuals wishing to have specific items presented for discussion should contact Bob Moody, at (415) 327-8080.

## Computer Peripherals: Extending the Machine's Reach/Senses

### Universal Home Terminal

In "Programming the Universal Home Terminal," Mark Cummings will describe present and future trends in home computer terminals, including their display capabilities, applications, and programmability. The emphasis will be on information utility applications for people who are not necessarily computer-oriented.

### Micro Peripherals

In "The Microcomputer Peripheral: The Unlimited Horizon," Jeffrey D. McKeever will review the development of peripherals for micros, and suggest what the future may hold.

Not only has the microcomputer revolution made the CPU the least expensive part of many systems, but it has spotlighted peripherals as the limiting factor in what is affordable. Thus, further developments in peripherals are necessary to make many applications practical (or even possible) that presently are not.

## Computer Literacy

"Computer literacy: It's Not Just For Kids Any More!" will be the topic of Mrs. Bobby Goodson's talk. Mrs. Goodson will describe some of the work being done to define and promote computer literacy.

Computer literacy implies that computers be readily available in schools, so that students can learn to use them — and, one hopes, to program them. As a result, students will learn what a computer is, and what it is not; what a computer can do, and what it cannot do; and what are some of the widely diversified uses of computers in our society.

### Terminal-User's Viewpoint

Computer communication by telephone is a confusing topic for beginners (and for some old-timers, too). It's plagued by buzzwords such as "half-duplex," "full-duplex," "protocol," "DAA," and "RS-232."

In "A Look at Telecommunications from the Terminal User's Point of View," Jim Jordon of Moxon Electronics will present an introduction to the topic. His talk will be designed to help computer users who are not engineers to choose and to use communications equipment intelligently.

### TV Interface

Tim Ahrens and Jack Brown, Jr. will describe the Motorola MC6847 Video Display Generator in "A Low-Cost Digital System Interface to a Color Television Set." The MC6847 is an inexpensive integrated circuit which can display alphanumeric and graphic information in eight colors and three luminance levels. It promises to be useful for low-cost computer systems and video games.

**SAVE \$2\***

**Preregister**

for the

**4TH WEST COAST COMPUTER FAIRE**

being held

May 11 - 12 - 13, 1979

Fri

Sat

Sun

9am-6pm

9am-6pm

Noon-5

in

**San Francisco's Civic Auditorium & Brooks Hall**

**Preregistration: \$7\***

**on-site registration: \$9\***

**ASK YOUR LOCAL COMPUTER**

or

**ELECTRONICS RETAILER**

**\* Includes Conference Program & Exhibits for all 3 days**

# The Intelligent Machines Journal

Price: 75 cents

345 Swett Road, Woodside, CA 94062; (415) 851-7075

79 Apr 18, Issue 7

## Light Sculpture Powered by FORTH

by Mike O'Malley

Milton Komisar says that he is not a "computer artist." However, for the past three years, Milton's ALTAIR and SOL have been his tools for creating and performing light sculptures.

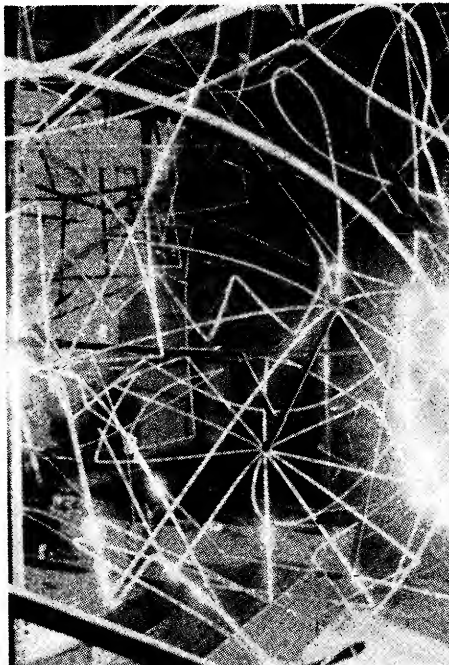
This May, simultaneously with the Fourth West Coast Computer Faire, there will be a show of Milton's computer sculpture at the San Francisco Museum of Modern Art. (This museum is in the Opera Building only a block away from the Faire site.) The show is the result of a competition sponsored by the Society for the Encouragement of Contemporary Art (SECA).

This prestigious competition was open to all artists in northern California. Milton's work was awarded first prize and an exhibition which opens — coincidentally but most appropriately — the very opening day of Computer Faire. The exhibit will be open from May 11th through June 3rd, from 10am to 6pm.

Three large sculptures (and two computers) constitute the exhibit in the main hall of the museum. Each sculpture is formed primarily from clear polystyrene rods supported by a superstructure of black plastic tubes. Several

hundred lights are embedded in the mountings for the plastic rods.

During a performance, the computer is able to control the lights in such a way that varying patterns and intensities play throughout the structure. The patterns are not, however, computer  
*continued on back page*



**THE COMPENSATION COROLLARY:**  
The experiment must be considered a success if no more than 50% of the observed measurements must be discarded to obtain a correspondence with theory.

### HOME SECURITY FOR QUBE SUBSCRIBERS

A home security system operating through the Qube cable network has been announced by Warner Cable Corporation, and will become available to Qube subscribers later this year.

The security system incorporates fire and intrusion detectors, and a "medical alert" button. An optional "security medallion" enables a subscriber to summon help even if he cannot reach the security system's control panel.

The detectors are tied to a microprocessor which communicates with the Qube cable. The central Qube computer polls each subscriber's security system periodically, just as it now polls each Qube television receiver.

When the computer detects an emergency, it prints a message at Qube headquarters and also at the appropriate service agency: police, fire department, or hospital. The computer also prints information about the emergency that is stored in its memory. For a fire, it would print a list of flammables kept in the house, and the location of the nearest fire hydrant.

The basic home security system is expected to cost about \$100 for installation and \$12/month for monitoring.

If the security system is a success, Warner Cable has plans to expand it into a complete home environment management and control system.

"An elephant is a mouse with an operating system."

unknown

## POLYMORPHIC OUT OF CHAPTER 11 PROCEEDINGS

Polymorphic Systems, which filed under the provisions of Chapter 11 of the Federal Bankruptcy Act on February 18, 1979, has emerged from the proceedings after approval by creditors of a reorganization plan presented in a hearing held March 29. Polymorphic is the manufacturer of the Poly-88 microcomputer, and one of the pioneers in the personal computer industry.

The reorganization plan calls for investments and guaranteed loans of close to \$900,000, according to Brian Wilcox, president and one of the founders of the firm. The plan further calls for a reorganization of top management, with the investor-group assuming operating control of the company. Don Gallant will become president of Polymorphic Systems, and Brian Wilcox will become corporate vice president.

Polymorphic emerged from Chapter 11 in what is close to record time. According to industry analysts, the proceedings usually take 90 days or more, and many last years. Polymorphic Systems' reorganization was completed in 29 days.

### JONES' LAW

The man who can smile when things go wrong has thought of someone he can blame it on.

## D.C. Hayes Modem/Coupler for Apple II

The Micromodem II™, a complete data communications system for the Apple II, is now available from D.C. Hayes Associates, Inc., of Atlanta, Georgia. This new system can transmit data between an Apple II and another Apple II — a terminal, another microcomputer, a minicomputer, or even a large time-sharing computer, anywhere in North America, over regular telephone lines. The System includes serial I/O, 1K byte of firmware, a 103-compatible modem, and an FCC-registered interface.

The Micromodem II converts digital data into analog signals for transmission over regular voice telephone lines. Because it is a Bell System 103-compatible modem, it can communicate with the most commonly used modems in North America. The Micromodem II can operate at either 110 or 300 baud, which is equivalent to 10 to 30 characters per second. It is equipped with an FCC-registered Microcoupler™ data access arrangement which feeds the signal into the telephone line through a modular



connector provided by the local telephone company. Since the Micromodem II directly connects with the telephone line, it can automatically answer the phone, or originate a call by dialing numbers either typed on the Apple II keyboard or generated in a program.

The Micromodem II comes with all necessary programs in ROM to operate in any of three modes: terminal mode, in which the Apple II is used as a terminal; remote console, which allows another terminal to call the Apple; or program control, in which Basic language programs are completed after review of examples in the owner manual.

The Micromodem II is available from most Apple II dealers, and will retail for under \$400. For more information, contact D.C. Hayes Associates, Inc., 16 Perimeter Park Drive, P.O. Box 9884, Atlanta, Georgia 30319; (404) 455-7663.

### Energy Initiative Proposal Predates Carter Announcement

It is interesting to note that the proposal for a California Energy Control & Development Initiative, advertised on pages 6 and 7 of this issue, was received about two weeks prior to President Carter's recent speech regarding his planned decontrol of oil prices, and the need for a windfall profits tax on the oil industry.

Once again — as was the case with Proposition 13 — it appears that California may take the opportunity to lead the nation in economic reform.

## TI Seeking FCC Waiver for its Home Computer

Texas Instruments' long-awaited personal computer has run into some difficulty with the FCC, a recent (March 19) *Business Week* article reports.

TI must gain FCC approval because the computer employs an RF modulator to display data on a user's television set; the modulator can interfere with local television reception if not properly designed.

In tests conducted late last year, TI's modulator failed to win FCC approval — a common occurrence on the first try, industry sources say.

Now, TI has proposed new regulatory rules that would allow the FCC to inspect computers and modulators separately, and would also give it authority over computers that are designed to be used with modulators, even when modulators are not built in. These rules, if accepted, would enable TI to market its machine on the same footing as those of other personal computer manufacturers, such as Apple.

But, rule changes can take up to a year to get FCC approval, and TI is unwilling to wait that long. Late in February, it requested a waiver of current FCC rules to allow it to market its computer while the new rules are still under study.

TI is optimistic about its chances for a waiver, says C. Morris Chang, TI group vice president.

### 4th West Coast Computer Faire Banquet & Keynote Addresses:

#### "VISIONS OF THE FUTURE"

Dr. Adam Osborne, President  
Osborne & Associates

"For Better or Worse:  
The Micro Revolution"

Dr. Egil Juliusen, Senior Member  
Texas Instruments

"Impacts on Technology:  
The Fun's Just Beginning"

also presentation of the

Second Annual White Elephant Award  
for outstanding achievement  
in microcomputing

Saturday, May 12, 1979

Jack Tar Hotel, International Room

Van Ness & Geary, San Francisco

6:30 p.m. - hospitality hour (cash bar)

7:30 p.m. - banquet is served

8:30 p.m. - after-dinner seating opens

8:45 p.m. - keynote speakers

banquet: Veal Oskar

banquet & speakers:

banquet & speakers: \$16

(Veal Oskar with crab leg portion)

after-dinner seating only: \$5

Limited capacity; reservations available  
on first-come, first-served basis. Send checks to:

Computer Faire

333 Swett Road

Woodside CA 94062

Tickets may be picked up at the banquet hall.

# FTC Proposes Rule on Product Standards & Approval

**Editor's Note:** In a previous issue, IMJ announced that we had been contacted by the Federal Trade Commission regarding several articles on the difficulties that Los Angeles computer retailers were having getting city electrical approval of computer equipment they were selling.

We are publishing here a notice of the FTC's rule proposal. The accompanying press release announces hearing dates on the proposed rule. Although the hearings are somewhat eleventh-hour, interested parties are still encouraged to write and/or to attend. Perhaps if enough input arrives, further hearings could be scheduled.

--TRW

The Federal Trade Commission has proposed a rule that its staff says could cut sharply the cost of many products that are now subject to allegedly unnecessary, inadequate, or overly restrictive standards.

Private groups which develop standards for products, and groups which certify that products meet those requirements, would be covered under terms of the proposed "Standards and Certifications" rule.

Product standards established by private groups define acceptable levels of product quality or safety. For example, a standard for electric heaters might include requirements designed to reduce electrical shock and fire hazards, as well as requirements relating to heat output and useful life.

Certification is handled by private laboratories, which test and certify products, and then permit sellers of products that conform to the standards to use seals of approval. For example, consumers shopping for electric heaters might look for seals of approval on those

items. These approvals are widely regarded by consumers, building code officials, insurance companies, and others, as a basis for accepting products.

The proposed rule would establish procedural safeguards for the development of product standards and certification processes, and would create channels through which deceptive or restrictive standards could easily be challenged. Specifically, the rule would:

- Require adequate notice of standards proceedings so that interested individuals and groups may decide whether to participate;
- Give everyone the right to participate in the proceedings;
- Establish a system that small businesses and other private parties could use to challenge standards they feel are unfair, deceptive, or anticompetitive. Under terms of the proposed rule, anyone wishing to challenge an existing standard need only show that the standard was arbitrary, excluded or discriminated among equivalent products, deceived consumers, or posed safety problems;
- Require standards developers to create an impartial appeal board to hear unresolved disputes.

If the rule becomes law, violators would be subject to civil penalties of up to \$10,000 per violation.

The FTC staff said its investigation showed that, although private standards and certification activities provide definite public benefits, many standards have caused substantial consumer injury and have hurt the competitive process. Specific problems disclosed by the staff investigation included: lack of adequate notice to those who might want to par-

ticipate in the proceedings setting standards; procedures that favor participation in, and domination of, such proceedings by established firms; inadequate disclosures of hazard information; and lack of adequate avenues to challenge deceptive or restrictive standards.

According to the staff, the setting of private standards and the related certification activities have, in some cases, amounted to unfair and deceptive acts or practices, or unfair methods of competition in violation of Section 5 of the Federal Trade Commission Act.

The Commission staff said its investigation showed that the injuries resulting from standards and certifications problems have included:

- Keeping lower cost or superior products off the market because of narrowly drawn standards;
- Impeding the sale of innovative products;
- Aiding in the sale of unsafe or shoddy products;
- Raising production costs and retail prices by imposing unnecessary requirements or lengthy product approval processes.

Certifier practices examined by the staff include: arbitrary or discriminatory treatment of some sellers by certifiers; inadequate disclosure to consumers of the meaning and limitations of seals of approval; and failure of certifiers to police sellers who falsely represent conformance of their products with standards. Under the terms of the proposed rule, all product certifiers would be liable for the truthfulness and reliability of their reports, listings, and seals of approval.

According to the staff, over 400 private organizations either write standards or sponsor standards-development activities. Some of these organizations provide procedural safeguards similar to those that would be required by this rule, while others do not. There are

more than 20,000 private standards in existence, affecting the quality and availability of virtually every product consumers purchase -- from nuts and bolts and building materials to household appliances and computers, says the staff report.

Any rule provision, or any topic addressed in the list of questions, is subject to comment. The Federal Register notice will contain instructions for prospective witnesses and other persons who wish to participate in the proceeding. It will also describe the availability of funds to reimburse consumers, small businesses, and other qualifying individuals and groups for their participation.

Dated: 78 Dec 6

Jacquin's Postulate on Democratic Governments:  
No man's life, liberty, or property is safe while the legislature is in session.

The  
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JOURNAL**  
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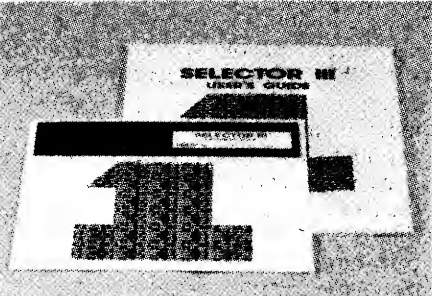


### SELECTOR III: An Interactive, Multi-key DBMS

A data base management system (DBMS) that allows users of CP/M-based microcomputers to enter records and update files interactively, also provides full query and report writer functions, according to a spokesman for Micro-Ap.

The system is distributed with a library of predefined record formats in a data dictionary, as well as with programs to manage and to report sales activity, inventory, payables, receivables, check register, expenses, appointments, and name and address functions.

The system supports up to 24 items (fields) per record. Any or all fields may be designated as 'keys' for retrieval purposes. This allows records to be retrieved using a variety of field values, e.g., by name, date, dollar value, part number, etc. Partial and duplicate keys are allowed and may be changed on line.



Once a record is retrieved, the file may be 'browsed' in ascending or descending sequence by the selected key. Reports may be generated in the same way, and can contain grand numeric summaries of totals, averages, maxima, or minima.

Selector III is distributed on diskette with source code (except for a machine language key maintenance program). User's system requirements are: 48K; CP/M (or derivative); two mini single-density drives or one larger capacity drive; terminal or monitor with 'up cursor' and 'erase screen' codes; and, ideally, a printing device. It operates under CBasic (also distributed by the company), and costs \$295. CBasic, which provides chaining with parameter passing, and complete commercial Basic functions, costs \$49.95 with Selector, or \$89.95 separately.

Contact Micro-Ap, 9807 Davona Drive, San Ramon, CA 94583; (415) 828-6697.

### Hearing On Proposed FTC "Standards and Certification" Rule

The public hearing on the proposed Federal Trade Commission rule on product standards and certification has been rescheduled by the presiding officer.

The hearing will begin in San Francisco May 21, 1979. Prepared statements by witnesses must be received by April 9, 1979.

The hearing will resume in Washington, D.C., June 25, 1979. Prepared statements must be received by May 14, 1979.

Prepared testimony should be submitted (in five copies, when feasible) to Henry B. Cabell, Presiding Officer, Federal Trade Commission, 6th and Pennsylvania Ave. N.W., Washington, D.C. 20580. These documents will be available for inspection in Room 130 of the FTC building.

The Commission encourages the public to participate in these hearings.

Received: 79 Apr 12

### LOW-COST, HIGH DENSITY COLOR GRAPHICS FOR THE S-100 BUS

Biotech Electronics of Ben Lomond, California, announces the BCG-800, a low-cost, high-density color graphics system that plugs directly into the S-100 bus computer.

The BCG-800 is capable of generating eight colors or two sets of four colors. It has eleven different software selectable modes: one alphanumeric mode with 32 x 16 characters in a two-color display; two semi-graphic modes with display densities ranging from 64 x 32 to 64 x 48 in eight and 4 color sets; and 8 full graphic modes with display densities ranging from 64 x 64 to 256 x 192 in two and four colors.

The BCG-800 has 6K bytes of on-board screen refresh RAM, bank select, board protect, and composite video.

The BCG-800 comes supplied with source and object listings of graphic driver routines for the 8080/Z80 CPU's. The driver routine includes: change mode, clear screen, plot point, move cursor, and draw line. A diagnostic program is included to test the BCG-800.

The BCG-800 is offered assembled and tested (BCG-800A) for \$325 in kit form (BCG-800K) for \$275, or the bare board supplied with the video display generator chip (BCG-800B) for \$45.

Contact Biotech Electronics, Box 485, Ben Lomond CA 95005; (408)338-2686.

### Package Turns Printer Into Plotter

Microcomputer Application and Hardware (MICAH) announces the availability of a complete plot support system for microcomputer users. The system turns any daisy wheel terminal (Qume, Diablo, DTC, Gen Com, Agile, A.J., etc.) into an incremental pen plotter.

Consisting of a fully documented set of subroutines written in Fortran 80, Cobol, and callable assembly routines, the system is available on 5" and 8" floppy disks. The software is fully compatible with all CP/M operating systems.

A demonstration disk consisting of five sample plot programs and a printer.

able manual file is available. The demo disk costs \$50; the complete system, including Fortran 80, costs \$395; and the plot system alone costs \$295. The manual is provided on disk so the user may run off as many copies as desired.

Contact Data Wholesale Corp., 700 Whitney St., San Leandro, CA 94577.

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Do Something About  
Those Oil Companies?**

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on

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Over 260 exhibits

Two keynote banquet speakers

12,000 - 16,000 attendees

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May 12 (Sat.) - 9 a.m. - 6 p.m.

Banquet: 6:30 p.m. - doors open (cash bar)

7:30 p.m. - banquet is served

8:30 p.m. - after-dinner seating opens

8:45 p.m. - keynote speakers

May 13 (Sun.) - noon - 5 p.m.

Convention (speakers & exhibits)

\$7 by pre-registration (through stores & clubs)

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Banquet & keynote addresses

\$16, banquet & speakers

\$5, after-dinner seating for speakers, only

(Because of limited capacity, reservations are available on a first-come, first-served basis. Please send checks to:

Computer Faire

333 Swett Road

Woodside CA 94062

(415)851-7075

Tickets may be picked up at the banquet hall.)

### Leave the Driving to Them!

Computer Plus, a retail computer store in Sunnyvale, California, is chartering buses to transport Fairegoers to and from San Francisco's Civic Center, site of the Fourth West Coast Computer Faire. The fee is \$6 for the door-to-door roundtrip. The buses will leave from Computer Plus, 1324 S. Mary Ave. (in the De Anza Square Shopping Center at Fremont and S. Mary) at 8:30 a.m. on Saturday, and return from San Francisco at 4 p.m. that afternoon. If there is a call for similar transportation on Friday and Sunday, the opening and closing days of the Faire, Computer Plus will additionally provide buses on those days. For information about pre-registrations to the Faire (\$2 less than on-site registration), Computer Faire Conference Proceedings, and other data for the complete computerist, please phone Lucy at (408) 735-1199, between 11 a.m. and 7 p.m. on Tuesday through Friday, 11 a.m. through 6 p.m. on Saturday, and noon to 4 p.m. on Sunday.

# WHAT'S IT?

(Wow! How'd All That Stuff get In There?)

from Computer Headware ...  
a Self-Indexing Query System  
for your Apple II, North Star, or CP/M machine

Distributed by:

- Information Unlimited / 219-763-2244  
P.O. Box 8372, Merrillville, Indiana 46410
- Lifeboat Associates / 212-580-0082 (CP/M model only)  
2248 Broadway, Suite 34, New York City 10024
- Structured Systems Group, Inc. / 415-547-1567  
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## Faster Version of Intel's MCS-48 Assembler

Intel Corporation's Microcomputer Systems Division has announced Version 3.0 of the MCS-48 Family Macro Assembler, a software product which permits assembly language programs to be written for the MCS-48 family of microcomputers. The new assembler offers a 100% performance improvement over the previous Version 2.0, Intel claims. The non-macro portion of the Version 3.0 Assembler offers a 10 to 15% performance improvement over Version 2.0.

The faster Version 3.0 permits program development on the Intellec<sup>®</sup> Microcomputer Development Systems for the 8048, 8049, 8041, 8748, 8035, 8021, and 8022 microcomputers. Other enhancements in Version 3.0 include an improved program listing format the assembler uses to display an assembled program. Moreover, specific improvements in Version 3.0 facilitate program listing on a teletypewriter.

Output from the MCS-48 Assembler is in standard Intel Hexadecimal object code format. It may be loaded directly to an ICE-48™ module for integrated hardware/software debugging. It may also be loaded into the Intellec Development System for 8748 PROM Programming, using the Universal PROM Programmer and Universal PROM Mapper software.

The new V3.0 Macro Assembler operates on Intel's Intellec Microcomputer Development Systems, and can be ordered under Product Code MDS-D48. 32K bytes of RAM memory are required for non-macro use and 48K bytes of RAM are required for use of the macro facility.

Both the SDK-86 kit and its SDK-C86 Intellec interface chip cable are available from distributor stock. The SDK-86 kit is priced at \$780, the SDK-C86 at \$300. Contact Intel Corporation, 3065 Bowers Avenue, Santa Clara CA 95051; (408) 987-8080.

## New 'Whatsit' Query System for Apple II

Computer Headware has introduced a new Apple model of the self-indexing query system, called "Wow! How'd All That Stuff Get In There?"

As does the companion models for North Star and CP/M systems, the new Model A-1 answers typed-in questions by referring to disk data that it automatically stores and revises, as instructed in short "Pidgin English" sentences.

A new "What's Next?" request provides assisted operation with automatic prompting. The Soundex Request is also new, enabling Whatsit to recognize entries that sound correct even if spelled incorrectly.

Whatsit has a typical response time of 2 to 10 seconds. According to the company, it is well-suited to jobs demanding rapid answers to queries. Applications include indexing investment portfolios, music or hobby collections, customer lists, and household or professional files.

Whatsit can maintain at least 200 entries on an Apple disk, and can cross-index them under any desired heading automatically. Unlike conventional systems, which freeze the user into a rigid file format chosen in advance, Whatsit simply 'evolves' any needed data structure during normal use, according to the company.

Unexpected new headings are instantly added to the file when first mentioned, and remain available for reference in the future. Obsolete headings are easily eliminated in a few seconds.

Whatsit's ability to 'learn' new headings stems from the use of a novel indexing technique, according to the developer, Computer Headware. Called the "Cartesian Access Method," it also performs cross-referencing, which is impossible in conventional "indexed sequential" files. Since every entry is packed into the smallest possible disk space, capacity is far greater, the firm claims.

Supplied on an Apple disk, Whatsit comes with a 150-page manual containing step-by-step instructions and numerous examples.

Contact Computer Headware, P.O. Box 14694, San Francisco, CA 94114; (415) 647-8518.

Paul Revere • Michaelangelo • The Pied Piper  
 Easter Bunny • Captain Kidd • Betsy Ross  
 Thomas Jefferson • Lady Godiva's Husband  
 Jesse James • Eli Whitney • Santa Claus

If these people were here today, all of them would find our custom-designed microcomputers useful in their small businesses. (Yes, Santa Claus, there is a more efficient way to keep track of all those elves!) They could have taken full advantage of our services:

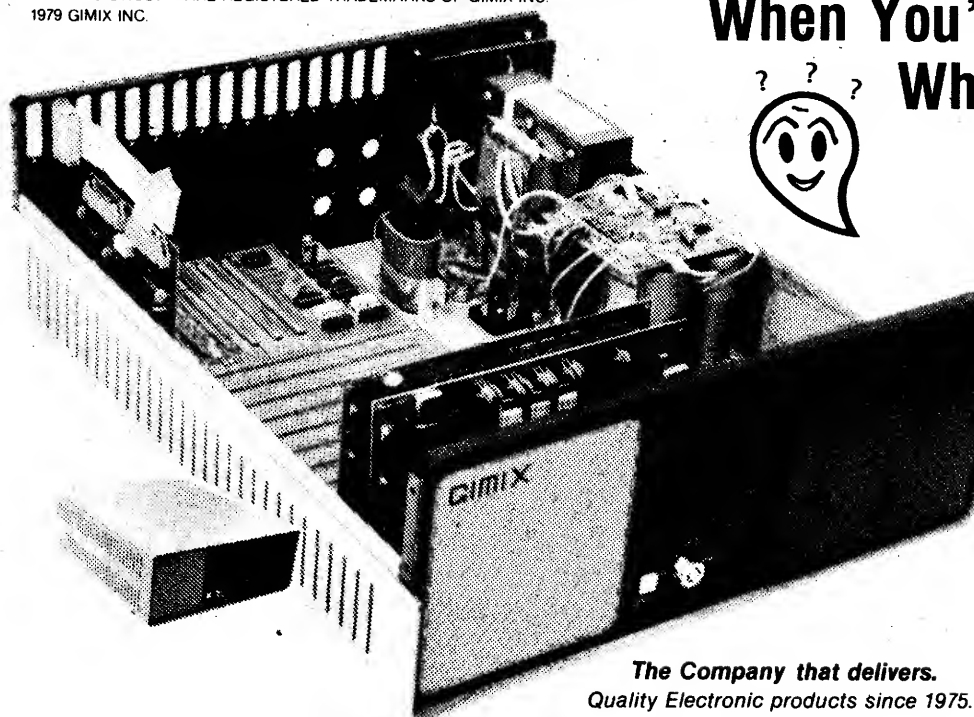
- We program and configure microcomputers, tailoring to fit **your** specific needs.
- teach your staff the transition from your present system to the computer
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**\$1294.29**

Other packages available.

### 16K STATIC RAM BOARDS - SS 50

Gold Bus connectors — DIP switch controllable addressing, write protect and enabling of each 4K block. Tested at 2 MHz.

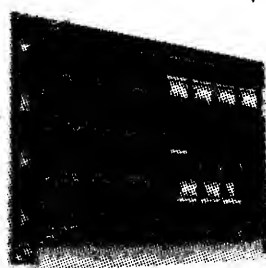
**\$ 298.13**

Assembled

Above but socketed and with software control registers.

Assembled

**\$ 368.16**



### DANDY PDP-8/I FOR SALE

DEC PDP-8/I in two 6'-high, 19" racks with:

8,192 12-bit words of core  
 four DECtape transports  
 four TU55's  
 TC01 controller  
 paper tape punch  
 manuals and schematics

computer computes  
 it all works & is  
 currently running

currently operating in  
 Sunnyvale, California

can run DEC's OS-8, DIBOL  
 cross assemblers for micros,  
 etc.

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 Sunnyvale**

(American Computer Group recently advertised the same components as a super sale for \$5,350)

Contact the owner:

Jim Warren (415) 851-7075



## Telephone Services for the Handicapped

The telephone company offers many special services that make telephones more accessible to handicapped people, thus making them able to function better in an office environment. The services can enable some people to work in a phone-related business, such as an answering service, which they otherwise could not handle.

Some handicapped people take advantage of special phone services to run their own businesses. For example, one man in Walnut Creek, California, sells and repairs iron lungs. He is quadriplegic, and is confined to an iron lung himself. Special services enable him to conduct most of his business by phone.

For the deaf, Pacific Telephone leases keyboard terminals similar to those used on computers. The terminals translate typed information into coded bursts of sound that can be transmitted over an ordinary telephone, and then translate them back to visible form at the other end of the line.

The terminals now being leased



are battery-powered and fully portable. They cost \$14/month for the deaf, and about \$30/month for others. An estimated 4000 to 5000 deaf people in northern California are using them.

Other devices are available to aid the blind. For example, a light probe is available which uses a photocell to tell a blind person which buttons on a key phone are flashing. The probe sounds a tone when held over a lighted phone button.

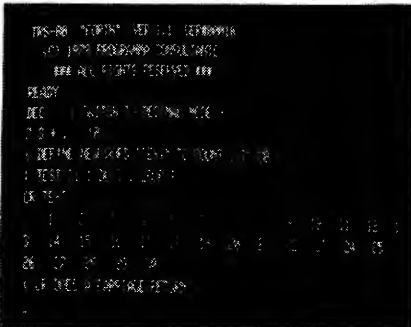
For persons with impaired muscle control, headsets and speaker phones are helpful. Speed dialing features let the user dial a number by entering a one or two digit code. Or, special phones can dial a number when fed a punch-coded card.

Information about handicapped services in California is available from Pacific Telephone's Northern California Handicapped Service Center. Based in Oakland, the Center may be reached at (415) 891-4122 or (800) 772-3240.

## FORTH LANGUAGE FROM PROGRAMMA INTERNATIONAL

Forth has been adapted by Programma International, Inc., for use with several microcomputer systems. Versions for Apple II, PET, Southwest Technical Products, Sphere, and TRS-80 are now available.

Forth offers several excellent advantages over other programming languages insofar as it requires only 6K of memory, a fraction of that needed by other languages. In fact, it can be placed in ROM if desired. Further, processing



times are only a portion of those required by other languages such as Fortran and Cobol. For instance, Programma International's Fortth typically runs from four to fifteen times faster than Basic. Software development times are less than half of those needed for other languages, according to the company.

The basic element of Fortth is a word, comparable to a subroutine, which is drawn from words already defined in the Fortth system's dictionary. A vocabulary of 200 words make up the Fortth dictionary. When programming in Fortth, new words which are drawn from the vocabulary can be user-defined, and may then be used to define more complex functions.

Several additional features built into Fortth Version 1.1 include an incremental assembler, compiler and interpreter, and text editor.

Forth object code is supplied on cassette with preliminary user's manual for \$35, plus postage. It is also available on diskette for the Apple II, priced under \$50.

Contact Programma International, Inc., 3400 Wilshire Blvd., Los Angeles, CA 90010; (213) 384-0579.

## Centronics' RO Data Communications Printer

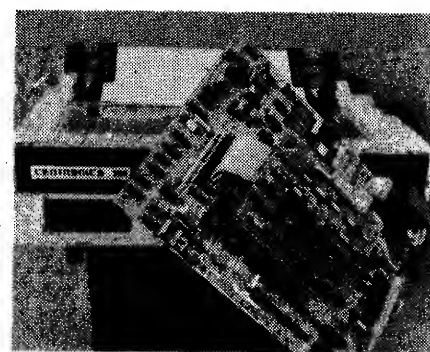
Centronics Data Computer Corporation (NYSE:CEN) has announced its specially designed Model 704 data communications printer. The Model 704 is the third Centronics printer product specially designed for data communications environments, as well as the eleventh member of the company's 700 series.

Throughput from 70 to 400 lines-per-minute in the Model 704 is achieved via the printer's 180 character-per-second print speed, which is capable of sustaining a 28-character line length, at 1200 baud, indefinitely, according to the company. The Model 704's communications features include built-in RS-232C serial interface and operator selectable line protocols.

In answer to the special needs of the data communications environment, Centronics designed a built-in RS-232C serial interface as part of the printer's inner electronics. A nine-foot RS-232C cable, usually an added cost option in comparable printers, has been made standard in the Model 704.

Three line protocols — XON/XOFF, reverse channel, and Data Terminal Ready — have been included to provide a high degree of printer interaction with host operations. All three protocols, as well as parity, stop bits, and standard baud rates from 110 to 9600, are DIP switch selectable. And, unlike many other data communications printers in which the selectability process is hindered by hard-to-reach or -manipulate switch locations, the Model 704's switch panel is conveniently located just behind the printer's front panel.

Although the Model 704 comes equipped with a 256-character buffer, an optional 2K page buffer is also available.



The Model 704 has a nine-pin free-flight print head, 132 column-line length, and the full ASCII 96-character set. In addition, descenders and underscores are made available to users looking to upgrade their printer's output quality.

The nine-pin free-flight print head operates by propelling solenoid-actuated wires against the paper in a near-straight line of free flight, enabling the user to utilize different forms thicknesses without adjusting the print head gap. This also provides for longer life, faster operation, even dot-density, smaller size, and less weight.

Bidirectional/logic-seeking operation is also standard, and, in combination with either the standard or the optional memory, allows for efficient look-ahead viewing of buffered data and the elimination of time-consuming carriage returns, Centronics claims. Also standard are two-channel downstream loading, forms override, and bottom/rear tractor paper feed.

In production and available in 60 days ARO, the Model 704 carries an end-user price starting at \$2,350, with quantity discounts available to qualified OEM's. Contact Centronics, Hudson, NH 03051; (603) 883-0111.

## Why Doesn't Someone Do Something About Those Oil Companies?

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How often have you heard —

## WHY DOESN'T SOMEONE DO SOMETHING ABOUT THOSE OIL COMPANIES?

- \* They've doubled prices in five years  
... and the legislators do nothing
- \* They've repeatedly reaped windfall profits from us  
... and the legislators do nothing
- \* They've gained control of geothermal lands  
... and geothermal production remains miniscule
- \* They've moved into solar energy, consuming public R&D funds  
... and solar energy development remains trite
- \* They are demolishing our entire economy for their private gain  
... and *they must be controlled!*

OK —

## We the People of California Will Do It!

- \* We Californians had the good sense to provide the ballot initiative as an alternative to legislative inaction
- \* We proved we could use it to protect ourselves against other ripoffs, with Proposition 13
- \* We used it to provide leadership to the entire nation
- \* We must now use it to gain economic protection in an area that makes property taxes look like pennies

A proposal for —

## A California Ballot Initiative

(the California Energy Control & Development Initiative)

### \*Replace Monopoly Practices With Competitive Pricing

Break up vertical integration in the oil industry  
separate producers, refiners, distributors & retailers  
— *let competition and free enterprise return*

### \*Encourage, Rather Than Hinder, Development of Alternative Energy Resources

Break up horizontal expansion within the energy field  
separate oil, geothermal, solar, coal, hydroelectric & nuclear  
— *let competition and free enterprise return*

### \*Take the Windfall Profits From the Monopolists

Rebate part to the public from whom they were ripped off,  
Use the balance to fund alternative, *publicly-owned* energy systems  
— *If we pay for 'em; we should own 'em*

# We Californians Can Do It

- \* We are an oil producing state — we can produce more than we consume
- \* We have extensive refining capacity  
(and we all pay the pollution costs of those refineries)
- \* We are the terminal for oil and gas pipelines
- \* We are the main Port of Entry for Alaskan oil
- \* We have extensive geothermal fields — all underdeveloped
- \* We have the technical and geographic facilities  
to finish developing solar resources

— And, because  
We are one of the few states with all of these, and  
We are the most populous state in the nation,  
We CAN protect ourselves against retaliation by the oil monopolists.

## It's Time WE Took Control of OUR Essential Energy Resources

### "YOU" IS PART OF "WE"

## Donate a Tankful of Gas — \$15 or More

(That was two tanks, five years ago, and  
it'll be half a tank in three more years — unless we act, NOW!)

- \* We need top legal advice in writing an airtight ballot initiative  
We know the oil mongers will challenge it in the courts
- \* We need massive publicity to get the facts before the public  
We know the oil mongers will lay down a heavy barrage of  
propaganda and scare tactics
- \* We need full-time staff — researchers, attorneys, publicists, organizers  
Part-time volunteers are great, but  
we can't attack the oil monopoly with spare-time help

## We Must Act — We Must Act Now!

California Energy Initiative, 345 Swett Road, Woodside, CA 94062, (415)851-7075, Director: Jim Warren

- ☐ I WILL take action, NOW! I want to help US regain control of OUR economic lives.
- ☐ When the Energy Initiative is prepared, send \_\_\_ copies for me to circulate for voter signatures. I am a registered voter in \_\_\_\_\_ county, California.
- ☐ I have the time, inclination, and ability to do investigative research for the Initiative.
- ☐ My name may be published as a donor and active supporter of the Energy Initiative movement.

Please print or type:

name \_\_\_\_\_

mailing \_\_\_\_\_

address \_\_\_\_\_

city \_\_\_\_\_ state \_\_\_\_\_ ZIP \_\_\_\_\_

☐ Call me when I can help: phone — (\_\_\_\_\_) \_\_\_\_\_

Enclosed, please find a check, payable to Energy Initiative, for:

☐ \$16\* — a tankful of 1979 gas

☐ \$30 — a tankful of unrestrained 1982 gas

I'd rather spend it now, once, and  
hope that I don't have to spend it then, weekly.

☐ \$50 — sustaining contributor

☐ \$100 or more — Major supporter

Send to: Energy Initiative  
c/o Jim Warren  
345 Swett Road  
Woodside, CA 94062  
(415)851-7075

(IMJ-7)

## We CAN Control Our Destiny — We WILL Regain Control of Our Lives

\* See? In the time it took you to read from the middle of the  
page to the bottom, a tank of gas went up \$1 (a sheik sneezed).

### NO ONE OBJECTS TO A REASONABLE PROFIT

No one objects to a business making a reasonable profit. No one objects to a major profit derived from innovative creation and invention. No one objects to a profit earned through hard work in a competitive environment.

But the oil companies are making their consistent, windfall profits by monopolizing an essential resource, holding alternative resources off the market, and lobbying sufficiently to prohibit the government from providing us with reasonable protection against their unilateral control of the energy market.

They are reporting windfall profits, in spite of their highly publicized billions of dollars spent on exploration and development; in spite of their considerable tax shelters — e.g., the oil depletion allowance; and in spite of their considerable ability to move money about within their multi-national corporations. In spite of all of their capabilities for spending money and manipulating their financial reporting, they still end up reporting consistent windfall profits.

Their profits are *not* reasonable. Their profits are not derived from innovation or creation. Instead, they derive from a long chain of public ripoffs, dating from long before the Teapot Dome Scandals, and continuing with the oil depletion allowance, and low, fixed-fee leases of public lands for high-profit private development. Their profits are not earned through hard work in a competitive environment, but through monopolization of an essential national resource — much of it being pumped from public lands, and sold back to the public at ripoff prices.

### Researchers, Lawyers, Petitioners, Writers, Community Organizers, . . .

Everyone in California is significantly affected by the monopolistic practices of the oil industry. Those practices affect the costs of all goods and services — much more than merely impacting gasoline prices.

If you are willing to take an active part in regaining control over your economy, join the Energy Initiative.

We need researchers to dig out the real data on the energy situation. We need them to document the source of the data being used by the media and the government — often, it turns out that such information is being supplied by the oil companies with no independent verification.

We need top-notch legal assistance. We need it to formulate a ballot initiative that even the oilers' best attorneys can't negate in court. And, we need first rate attorneys to successfully fight the court challenge to the initiative that will certainly be filed by the oil monopolists.

Perhaps most of all, we need you to (1) spread the word of the Energy Initiative, and (2) to sign and circulate the Initiative for voter signatures, once it is completed and printed. *Everyone CAN do something.*

And, as our treasury allows it, we will need full-time, skilled, dedicated staff — receptionists, writers, media specialists, speakers, and so on.

If you are willing to be an energy activist in any way, attach a note to your donation indicating how you can help.

If you have particular talents that would be helpful to the Initiative, please send details and a resume. (We are particularly interested in locating researchers who have experience in the petroleum industry.)

(Please write — do NOT call. We have a limited staff, right now, and time spent talking to callers is time taken away from the massive organizational effort that is necessary if this Energy Initiative is to succeed.)



## Pascal Advancement Society of California

The Pascal Advancement Society of California (PASCAL) is a non-profit group of computer enthusiasts formed to exchange information about, and to cooperate in obtaining, Pascal systems and programs. The Society was formed by a group of local Pascal users, and will have its first regular meeting on Thursday, May 3, at 7:30 p.m. at the Varian building 7 auditorium, in Palo Alto.

As the first order of business, the Society is soliciting members who are interested in obtaining Version II of the UCSD Pascal system for 8080/Z80 systems for a contribution of \$15 per

person. Under the terms of the UCSD Pascal Software License, the system can be distributed to "any number of non-commercial locations used by members of a *bona fide* club or association of individual computer enthusiasts." The cost of the source and object disks for all of the significant software for this system is approximately \$600, and the Society hopes to be able to order by the end of April. Each participant must sign an agreement to abide by the terms of the Society's license with UCSD, and will have to supply their own blank disks (12 sides are needed to hold all of the source and object).

The Society will order only two copies

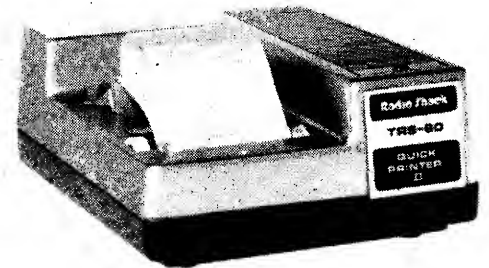
The UCSD Pascal system is distributed on 8" soft-sectored, floppy disks and requires an 8080 or Z-80 system with at least 48K of RAM and one floppy disk. The system uses a machine-dependent version of a CP/M type BIOS to interface with the peripherals (CP/M is not required to use the system, but it does make bringing-up easier). The system includes source and object for two editors, a compiler, an 8080/Z-80 assembler, linker, librarian, P-code disassembler, disk file manager, etc. Mail membership applications to:

Mark Gang  
2262 Fairvalley Ct.  
San Jose, CA 95125  
(408) 267-4913

## INEXPENSIVE PRINTER FROM RADIO SHACK

Radio Shack, manufacturer of the TRS-80 microcomputer system, has introduced an inexpensive printer that produces low-cost, hard-copy output on 2-3/8" wide aluminum-coated paper.

The Radio Shack TRS-80 Quick Printer II prints both upper and lower case characters, as well as double-size characters and double-spaced characters to allow for special effects such as titles or headings.



Automatic "wrap-around" prevents data loss due to overflow when the text exceeds the maximum line length, according to Radio Shack. The printer is software-selectable for 16 or 32 characters per line, and produces 120 lines per minute, 64 characters per second.

Character set is a modified subset of ASCII, 96 characters with upper and lower case, 5x7 dot matrix, 6 lines per inch vertical spacing. It can produce all 32 ASCII control codes, as well as codes for the printed characters.

Although designed for use with Level II TRS-80 systems, the printer is also said to be usable with a variety of other computers. Quick Printer II features three standard interfaces: TRS-80, RS-232C, and 8-bit parallel. It can be connected directly to the TRS-80 CPU, or, with optional cable, to the TRS-80 expansion interface.

The Radio Shack TRS-80 Quick Printer II is priced at \$219, and is available from Radio Shack Computer Centers and participating stores.

Friends: people who borrow your books and set wet glasses on them.

## The Petroleum Patrol: Information Processors — Unite!

Jim Warren, the publisher of *IMJ*, is starting a California ballot initiative drive to control the oil companies — at least in California — and to encourage development of alternative energy systems. (Interestingly enough, he began this drive several weeks prior to President Carter's energy message.) Recognizing that there is a great need for accurate and comprehensive information about the oil monopoly, Warren has issued a call for citizen investigation and data compilation.

Naming it the "Petroleum Patrol," he is calling on everyone interested in regaining control of the oil monopoly and the runaway inflation it precipitates. He is requesting that everyone keep a sharp eye out for information about oil industry practices, e.g., newspaper articles, research reports, fuel prices in their neighborhood, import and export data, etc. Forward all information to

Energy Initiative  
345 Swett Road  
Woodside, CA 94062

He requests particular attention to this from those who are familiar with energy industry operations, e.g., employees in refineries and corporate data processing centers (requesting only officially released data, of course), energy researchers, cost analysts, etc.

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First update out July 1, 1979

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# Intel Releases 8-Bit Microprocessor Containing 16-Bit Architecture

Intel Corporation plans to announce the 8088, a high-performance 8-bit microprocessor. It contains the 16-bit internal architecture of the 8086, combined with the 8-bit bus interface of the 8085A. The 16-bit internal structure provides performance far surpassing any current 8-bit device, the company says. The 8-bit format makes the new device compatible with most of today's microprocessor system designs.

The 8088 is software-compatible with the 8086. It features advanced arithmetic and alphanumeric (ASCII) data capabilities; programs require fewer instructions and run faster than with other 8-bit machines. As a member of the 8086 family, the 8088 is supported by an extensive range of development systems, software, and peripherals — all available now.

The internal architecture of the 8088 is essentially the same as that of the 8086, containing all the features found in that 16-bit unit and containing some not found in any other 8-bit microprocessor:

- Megabyte addressing
- Flexible addressing modes — two levels of indexing plus displacement possible in a single operation
- 8/16-bit hardware multiply/divide, signed or unsigned
- Extensive string-handling instructions
- Instruction lookahead
- Dynamic program relocation capabilities

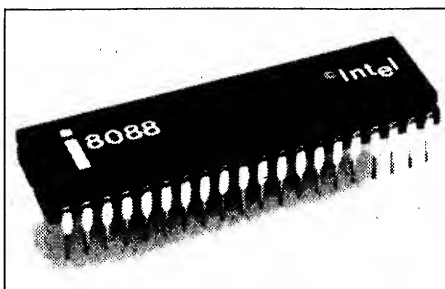
The 8088's internal architecture enables it to process 8- or 16-bit data in single, string, or block form. Sixteen-bit quantities are automatically fetched and written by the CPU, a byte at a time. The device also features special control lines both to facilitate operation with multiple processors and shared resources, as well as to interface with the Intel Massbus™ architecture.

The 8088 features 20-bit addressing, enabling it to address directly up to a megabyte of memory. The memory space is addressed in segments of 64K bytes. The device has 24 addressing modes, including those with three levels of indexing (base register value, index register value, and displacement), which are summed then added to the appropriate segment register to create the addresses. These modes make it easy to perform string, table, and metric operations within the basic instruction set. Segmentation allows program code and data to be relocated dynamically by moving the code or data and changing the value of the segment register. Program branches can be made relative to the current program counter to provide position-independent and relocatable code.

The 8088 contains its own hardware 8-bit and 16-bit signed and unsigned "multiply" and "divide" instructions. Arithmetic operations can be used with binary, ASCII, or packed decimal (2-digits per byte) numbers. In addition, the 8088 includes many string operations specifically intended for handling alphanumeric data. These operations perform manipulations such as block moves, string comparisons, data scans, and data translations.

Inside, the 8088 is divided into two processors — a bus interface unit (BIU) and an execution unit (EU). The bus interface unit handles input/output data transfers and interfaces with memory, continually fetching instructions which are stored in a four-byte queue. The execution unit, which includes the ALU (Arithmetic/Logic Unit), executes the instruction stream from the queue and manipulates the internal registers.

The 8088 operates at 5 MHz and uses a four-clock (800 ns) bus cycle. A



16-bit register move takes only 400 ns to execute when the instruction is waiting in the queue. Eight-bit multiplies are accomplished in 15 microseconds, and 16-bit multiplies in 26 microseconds, with full 32-bit results.

Assuming the same system cycle time, a 16-bit bus has twice the bandwidth of an 8-bit bus; thus, the wider bus can have considerably higher throughput. However, as mentioned earlier, both the 8088 and 8086 include instruction 'fetch-ahead.' This instruction queueing increases the efficient utilization of the data bus, and makes bandwidth comparisons application-dependent. Intel claims that the throughput of the 8-bit 8088 is between 70 and 80% of the 16-bit 8086 — significantly higher than is indicated by the bus bandwidth comparison alone.

Retaining an 8-bit bus structure when designing a new system maintains compatibility with existing hardware. An 8-bit board can be redesigned and upgraded without changing backplanes, connectors, memory structure, or peripheral controllers.

Another reason Intel gives for using a bus 8-bits wide is that it offers savings in drivers, transceivers, and board space.

The 8088 is being sampled now and will be shipped for distributor stocking in April. Pricing will be available in late March. Contact Intel Corporation, 3065 Bowers Ave., Santa Clara, CA 95051; (408) 987-8080.

## ADAPT: Typesetting from Data Files

Adapt, a San Francisco firm, offers a phototypesetting service which runs on a large, general-purpose computer. Adapt can program the computer to extract text from data processing files, reformat it, and compose it in one operation.

Some popular applications of this facility are corporate directories composed from personnel files; catalogs composed from inventory files; and specialized lists of data extracted from large data bases.

The facility also performs composition tasks that require data processing, such as extracting, sorting, and typesetting an index for a large document.

The service is unusual, Adapt notes, because most computer typesetting systems are designed for typesetting only, and have little or no data processing capability.

Adapt's customers can also compose documents from text and format codes entered through a communicating word processing machine or computer terminal. Adapt develops customized command codes for each customer's application. Customers can also use Adapt's general purpose command codes, which give them complete format control over each document produced.

For more information, contact Adapt, Inc. at 450 Sansome St., San Francisco, CA 94111; (415) 989-0180.

The only way to amuse some people is to slip and fall on an icy pavement.

SYBEX

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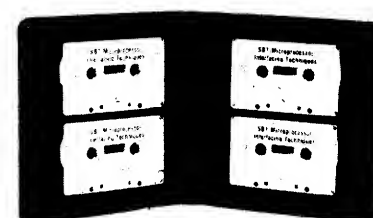
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## Computer Cookbook: Fast-Update Source

*The Computer Cookbook*, a loose-leaf reference service being prepared by William Bates of Berkeley, California, will address a wide variety of topics concerning users of small computers.

"There's a great need for reference books on small computers," Bates explains. "The problem with most existing books is that they're dead on arrival — obsolete before they're published. The solution is to publish the book in loose-leaf form and distribute periodic updates.

Bates plans to sell *The Computer Cookbook* for \$15. The first release will contain an estimated 300 pages, and updates will be distributed, at no charge, every 6 to 8 weeks.

The book will consist of collections of articles in several categories, such as hardware and applications software. Its content will be a combination of product information, introductions to special topics, and specific "how-to" information." Articles will vary in length from one paragraph to many pages.

"It really is a cookbook, in the sense that it gives you the elements of a system and shows you how to put them together," Bates comments. "A cookbook gives recipes, but doesn't provide flour; that's up to the individual chef. In the same way, what you make of *The Computer Cookbook* is up to you."

### Business Applications

Bates believes that the parts concerning business applications should be of interest to businessmen without computer backgrounds. These parts review all the basic business applications of computers, such as accounts receivable, payroll, tax computation, and inventory. They explain not only what the applications are, but how they work and how they can be programmed on a computer.

Some sections are general, dealing with topics such as error-checking and handling dates in a computer program. These sections often contain short computer segments to illustrate the principles discussed.

Other sections go into less widely established uses of small computers, such as word processing. Many sections deal with special programs that are not available elsewhere, such as a program that helps a tax payer decide whether to use income averaging, and if so, how.

In some places, Bates steps back from computer topics and addresses other areas likely to be of interest to businessmen reading the book. For example, there is a section on various schools of thought in security analysis which discusses the approaches most amenable to computerization.

One of the more exotic topics is how to connect a small computer to a stock-exchange wire service. The book discusses the types of service available and the process of arranging a hookup. It also describes the format of the wire-service data in enough detail to let the user write a computer program to process the information coming over the wire.

In another article, Bates explains the logic of an investment analysis program used by Merrill Lynch, Pierce Fenner & Smith. Merrill Lynch investment analysts consult the program to help them decide when to buy and sell.

### Education, Medicine, Sports...

Other parts of the book cover subjects ranging from computers in education, to sports simulations, to computing astrology charts. "I use the butterfly-collector approach," explains Bates. "I talk to a lot of people, and whenever I run across something interesting, I put it in."

In all cases, Bates says, he gets his information by going to the source — the people who are using computers in the application being discussed.

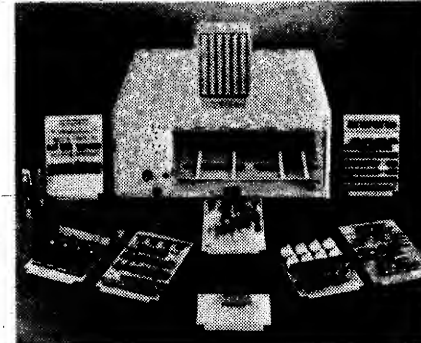
### Availability

Bates expects the first release of *The Computer Cookbook* to be available in time for the Fourth West Coast Computer Faire.

The book may be ordered from William Bates at Box 4084, Berkeley, California 94704. The cost is \$15 plus \$1.50 for shipping, plus \$0.98 sales tax for California residents.

## REAL WORLD INTERFACE SYSTEM

The Real World Interface System is a low-cost, general purpose data acquisition and process control system designed for use with mini- and microcomputers. It features many different plug-in modules designed to give the user the flexibility and power to configure his system according to his needs. Applications include environmental control, peak demand limiting, robotics, and automated assembly line testing.



The Real World Interface System has its own cabinet which includes a power supply, card cage, and motherboard with slots for up to 12 plug-ins. The plug-in modules include A/D and D/A converters, as well as a computer interface card. Each plug-in card has at least 8 channels of input or output (except for a maximum of 4 channels on the current probe); some have 16 or even 32 channels.

Most plug-ins are off the shelf; can be purchased either in kit form or assembled and tested. The modules range in price from \$65 a kit (\$79.50 assembled) for the 8 channel DC Controller Card, to \$125 a kit (\$150 assembled) for the 8 channel AC Controller Card. A cabinet, complete with motherboard, power supply, and parallel CPU interface, is \$299 a kit (\$360 assembled).

Contact Michele Bielak, General Computer Technology, 400 S. Lipan, No. 2, Denver CO 80223; (303) 722-5734.

## 80 x 24 Video Board for SS50 Bus

Gimix, Inc., announces an 80 x 24 video board with hardware scrolling, x-y addressable cursor, and multiple character generators, for the SS 50 bus. The board allows user-defined programmable character sets. It includes a TMS 2716 EPROM that contains a full 128 upper and lower case ASCII character set with true descenders; a socket for another TMS 2716 for an optional 128 character set; and 2K of RAM for user-defined programmable character sets. This gives the user the ability to create hieroglyphics, alphabet, graphic elements, etc., and store them on PROM, disk, or tape.

The user can choose and intermix 384 different characters from any or all of the character generators and display up to 256 at one time (normally or inversely), at full or half intensity, at any location on the screen. Contiguous 8 x 10 character cells permit solid lines and connecting patterns with user-definable graphic elements.

It is addressable to any 2K boundary. GHOSTable addressing allows multiple boards at the same address, making it ideal for multi-user applications. Custom screen and character cell formats, and European versions, are available.

The available software includes a GMXBUG video-based 3K ROM monitor, stand-alone driver routines, and a program to create user-defined characters.

Contact Richard Don at Gimix, Inc., 1337 W. 37th Place, Chicago, IL 60609; (312) 927-5510.

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# Single-Line Digital & Analog Communications for Canadian City

A new communication system based on fiber optics will bring telephone, television, radio, and interactive data communication services to the small town of Elie, Manitoba, in an experimental program of the Manitoba Telephone System (MTS).

The program is jointly sponsored by MTS, the Canadian Telecommunications Carriers Association (CTCA), and the Canadian federal government's Department of Communications (DOC). It is intended to advance Canadian fiber optics technology, and to determine the kinds of fiber optics services which would be feasible and desirable to offer to the general public.

## PROPOSED BY MTS

The project was proposed by MTS in 1976, and got the official go-ahead in June, 1978. Northern Telecom and Canada Wire and Cable Company, two manufacturers of telephone equipment, were engaged to develop project proposals. In February, 1979, Northern Telecom was selected to develop equipment for the project. Service is expected to begin in January, 1980.

In its first phase, the project will supply single-party telephone service and five television channels to ten Elie households. Later, 140 more households will receive single-party telephone service, nine television channels, and up to seven FM radio channels.

Elie's 600 households presently receive four broadcast television channels from nearby Winnipeg. Some people can get single-party telephone service and others cannot, depending upon their location.

## INTERACTIVE SERVICES PLANNED

In later phases of the project, interactive services will be introduced. Proposed services include information retrieval, at-home shopping, electronic auctions, and home security service.

## FIBER OPTICS HARDWARE

The pilot project will be built around transmission by fiber optics instead of by electric cable; encoded signals will be carried by glass fibers no thicker than a human hair, rather than by electricity. Signals will be generated by light emitting diodes at each end of the fibers, and picked up by photoelectric detectors.

Fibers will go directly to subscribers up to five miles from the telephone service's central station, says George Tough, who is overseeing implementation of the system for MTS. More distant subscribers will be served through repeater stations.

The fiber system will go right to each subscriber's home, Mr. Tough notes. There, a microprocessor in a special control box will convert the pulses of light back into electricity, and route signals to the telephone, television, or to some other device.

Both digital and analog data will pass over the fibers. Telephone transmissions will be digital; television images will be analog.

## FUTURE FIBER PLANS

The project planners hope that Elie will set a pattern for telecommunications development in Canada and elsewhere. They believe that mass-produced fiber cable will be much cheaper than electrical cable, since it is made of glass rather than of copper. Fiber cable also can carry several times as many signals in the same size conduit, making it an attractive replacement for wire in urban

cable ducts that are already full.

Lower distribution costs will mean expanded services in rural areas where they are not presently economic. Writing in *Echo*, MTS' company journal, manager Tough notes, "MTS's mandate from the provincial government includes both city and rural areas. . . . With a considerable portion of Canada's population located outside urban areas, a fiber optics solution will be viewed with interest throughout the country, and even perhaps throughout the world."

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Want ads must be typed in upper and lower case. Payment must accompany the ad copy. Ads and payment should be sent to: IMJ, 345 Swett Road, Woodside, CA 94062.

## Qube Will Televis Congress

Televised proceedings of Congress became available to Qube subscribers the week of April 9, Warner Cable has announced. The service is originated by the Cable Satellite Public Affairs Network, a non-profit organization based in Washington, D.C. It is distributed to cable T.V. systems via satellite.

Qube will provide unabridged coverage of congressional actions — "gavel to gavel" says Warner's vice president of public affairs, Leo Murray. One of the cable system's channels will be dedicated to this function.

In addition to presenting legislative sessions to the public, Qube will return public reactions to the legislators. Viewers of the congressional channel will be asked their opinions of legislation that is before Congress, and of the performance of their representatives on Capitol Hill. The results, collected through Qube, will be tabulated and sent to the Congressmen and Senators concerned.

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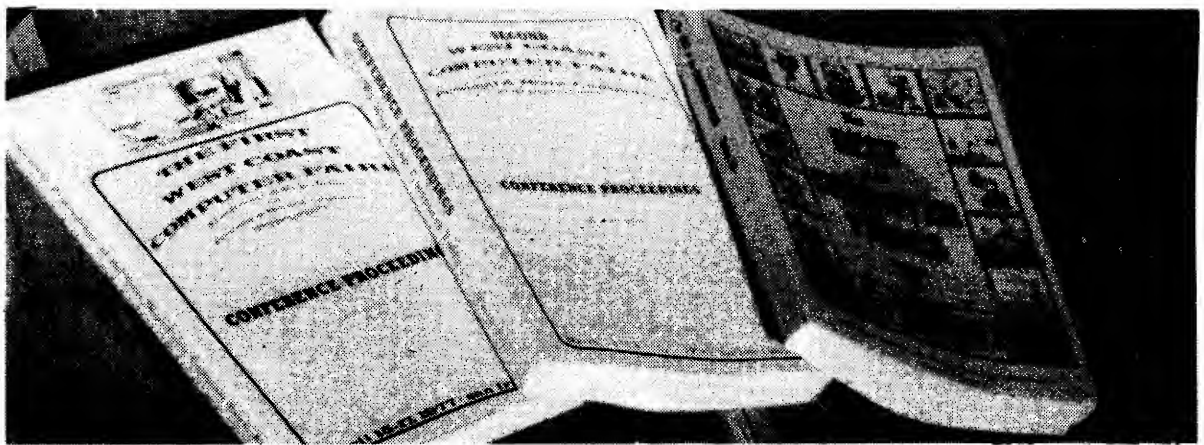
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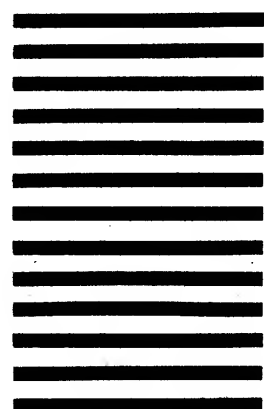
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# Litronix' Intelligent Alphanumeric Displays

Litronix, Inc., has introduced two Intelligent Displays™, the DL2416 and DL1414. These devices provide a means for communicating short messages between machines and users. They are space-saving modules that convert computer data to readable numbers and letters; they accept ASCII information from the system data bus, store it, and convert it to letters on bright LED alphanumeric displays. Each module displays four letters, and modules may be placed side-by-side to present words, phrases and even sentences.

In system design, the Intelligent Display is treated as a peripheral which is built into the front panel of the product, which can even be done with hand-held products.

A major part of the electronic product growth that is now occurring is in products for use by non-technical people. The Intelligent Display improves the machine interface to these users, according to Litronix.

Both the DL2416 and DL1414 are constructed with a special-purpose CMOS IC plus four 17-segment LED displays. These are mounted on a small multi-layer circuit board, covered with a plastic lens case which is filled with a clear plastic.

The microprocessor treats the Intelligent Display as a RAM. Each digit is addressed through the address bus, and information to be presented is fed via the data bus. The Intelligent Display stores the data, translates it from 7-bit ASCII to the LED segment drive, and continuously displays the information.

A cursor function is provided on the DL2416. The cursor can override any or all characters, and turn on all segments. During cursor operation, the basic data for the digits remains stored and can be changed so that when the cursor is turned off, the new characters appear.

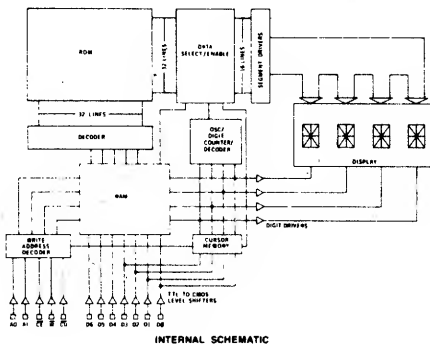
The Intelligent Display gives the user a small, low-cost alphabet and number display with a built-in electronic interface to the microprocessor. It permits word communications to be incorporated into compact equipment. The messages can include operating instructions or questions which give the user choices (i.e. control over the next step) or tell him what is going on within the machine.

The messages tend to be short (up to 80 characters) and the products tend to be in new markets, e.g., portable chess games, language translators, or hand-held terminals. The probable application will be natural language communications built into portable equipment and then expanded into other areas.

## Digital Group Computer Users Meeting

The Digital Group Computer Club of San Jose, California, invites all Digital Group (DG) computer owners, users, and all other interested parties to a DG users' meeting at the West Coast Computer Faire, Sunday, May 13, at 10:30am. Mr. Bemis, president, and Dr. Suding of DG will address the meeting. In addition, Doug Bell, Hugh MacDonald, and other DG computer specialists will be on hand to help make this meeting the most informative, helpful, and vital DG users' meeting yet.

Your fellow DG users want to share their experiences with you. Discover what's available for your computer system and what you can do to make your hobby even more exciting.



In large quantities, the Intelligent Displays are estimated to cost only \$1 to \$1.50 more than the cost of LED characters alone. The price in 1000-piece quantities for the DL2416 is \$26 each, for the DL1414, \$13 each. Both units are available from stock.

Contact Litronix, Inc., 19000 Homestead Rd., Cupertino CA 95014; (408)257-7910.

Lighthouse: A tall building on the seashore in which the government maintains a lamp and the friend of a politician.

## EMPLOYERS:

Find a mighty micro person via an employment ad in the *Intelligent Machines Journal*, reaching 20,000 or more computer fanatics. It's only \$20 for a 1-inch ad.

## 4TH WEST COAST COMPUTER FAIRE CONFERENCE PROGRAM

----- FRIDAY, MAY 11, 1979 -----

|        | POLK 1   | POLK 2      |
|--------|--|-------------|
| 3 p.m. | Designs & Standards  | Peripherals |
| 4 p.m. |  |             |
| 5 p.m. |  |             |
| 6 p.m. | Microcomputer Industry Trade Association (MITA): General Meeting |             |
| 7 p.m. |  |             |

----- SUNDAY, MAY 13, 1979 -----

|         | POLK 1                                  | POLK 2                              | LARKIN 1                   | LARKIN 2                     |
|---------|---|-------------------------------------|----------------------------|------------------------------|
| 10 a.m. |   |                                     |                            |                              |
| 10:30   | Digital Group Users Society             | Heath Users Group                   | Forth Interest Group       |                              |
| 11 a.m. |   |                                     |                            |                              |
| Noon    |   |                                     |                            |                              |
| 12:30   |   |                                     |                            |                              |
| 1 p.m.  | Low-Cost Computers in Business (Part I) | Communications & Consumer Computing | Computer Retailers Meeting | Medical Micros               |
| 1:30    |   |                                     |                            |                              |
| 2 p.m.  |   |                                     | Forth -- Introduction      |                              |
| 2:30    |   |                                     |                            |                              |
| 3 p.m.  |   |                                     |                            | Micro Applications (Part II) |
| 3:30    | Low-Cost Computers & Business (Part II) | The Motorola Micros                 |                            |                              |
| 4 p.m.  |   |                                     | Forth -- Details           |                              |
| 5 p.m.  |   |                                     |                            |                              |

The San Francisco Convention & Visitors Bureau offers a variety of information to assist out-of-area visitors to 'The City'. The Bureau may be of particular assistance to those attending the 4th West Coast Computer Faire, to be held in San Francisco's Civic Auditorium & Brooks Hall, May 11-13. Among other things, the Bureau offers guides to restaurants and 'night life,' and has a daily events 'hot line' — (415) 391-2000. For guidebooks and more information, call or write:

San Francisco Convention & Visitors Bureau  
1390 Market Street  
San Francisco CA 94102  
(415) 626-5500

## SAVE \$2\*

### Preregister

for the  
4TH WEST COAST COMPUTER FAIRE  
being held

May 11 - 12 - 13, 1979

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9am-6pm 9am-6pm Noon-5

in  
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Preregistrations will be available through participating stores beginning March 15th.  
\* Includes Conference Program & Exhibits for all 3 days

Bigot: One who is obstinately and zealously attached to an opinion that you do not entertain.

—A. Bierce

# Adam Osborne & TI's Egil Juliussen to Address "Visions of the Future"

Dr. Adam Osborne, president of Osborne & Associates and undoubtedly one of the three or four best-known writers and lecturers in the microcomputing field, will be one of the two keynote speakers for the 4th West Coast Computer Faire. Dr. Osborne considers the next "Industrial Revolution" to be already upon us, and will be expounding his views in his talk, "For Better or Worse: The Micro Revolution."

Dr. Egil Juliussen, a senior member of Texas Instruments' technical staff at the Corporate Engineering Center, in Dallas, will be the other keynote speaker. Dr. Juliussen has lectured widely on trends and futures of technology, and is

currently involved in strategic planning and computer systems research and development at TI. He has a background in computer architecture and graphics, and has also worked for several years in the area of bubble memory systems.

Dr. Osborne will also be presenting his Annual White Elephant Award for outstanding achievement in the microcomputing industry. The award, created and unilaterally judged by the inimitable Dr. Osborne, was named with the following rationale:

Everything is backwards in the micro industry. It began with customers enthusiastically purchasing unreliable equipment that was essentially unusable due to non-existent software. As products have become more reliable, they have become less expensive. As more capability has been added, prices have dropped, not risen. Engineers and programmers with little or no business experience have formed some of the most successful companies. The first products in the marketplace were the most complex, rather than being the simplest. In other words — everything's backwards.

Recognizing this, Dr. Osborne chose to name his award for outstanding and useful achievement, the "White Elephant Award." The award consists of a gold plaque engraved with the recipient's name, on which is mounted the "chip of the year" (in Adam's opinion). A tiny, carved ivory white elephant is mounted on top of the silicon chip.

The keynote banquet will take place Saturday evening (May 12th) in the International Room of the Jack Tar hotel in San Francisco. The banquet meal will include Veal Oskar and a crab leg portion. Banquet space and after-dinner speaker seating is limited and is available on a first-come, first-served basis.

Reservations may be made by sending a check for the appropriate amount to the Computer Faire, 333 Swett Road, Woodside, CA 94062 — \$16 for banquet and speakers, \$5 for after-dinner speaker seating only. Tickets for reservations made by mail will be held at the door of the banquet hall.

## 4th West Coast Computer Faire Banquet & Keynote Addresses:

### "Visions of the Future"

Jack Tar Hotel, International Room  
Van Ness & Geary, San Francisco

Saturday, May 12, 1979

6:30 p.m. — Open house (cash bar)  
7:30 p.m. — Banquet is served  
8:30 p.m. — After-dinner seating opens  
8:45 p.m. — Keynote speakers

Ask not, what the government is going to "give" to you.  
Rather, ask how much it is going to take from you in comparison with how little it will give back to you.

## Special Retailers' Showing at Faire

The Computer Faire exposition will be open for a special showing for retailers and exhibitor guests on Sunday morning, May 13, from 10 a.m. to noon. Computer and electronics distributors and retailers may obtain a "Retailer" ribbon to attach to their admission badge — allowing access to this special showing — by requesting it on letterhead stationery from the Computer Faire office.

Immediately following the Sunday morning retailer show, there will be an open meeting for computer retailers, co-chaired by Bob Moody (Byte Shop of Palo Alto) and Portia Isaacson (Micro Store, Dallas) in one of the conference halls of the Civic Auditorium.

## ----- SATURDAY, MAY 12, 1979 -----

|         | POLK 1  | POLK 2                         | LARKIN 1                                     | LARKIN 2                                    |
|---------|---|--------------------------------|--|---|
| 10 a.m. |   |                                | Terminals                                    | Computers & Education                       |
| 10:30   | Digital Communications for the Public                 | Pascal, Pilot & Programming    |  |   |
| 11 a.m. |   |                                | Computers for People                         |   |
| 11:30   |   |                                |  | Micros & Amateur Radio                      |
| Noon    |   |                                |  |   |
| 12:30   |   | Multiple Micros                |  | Specific Educational Applications of Micros |
| 1 p.m.  | Digital Broadcasting for Mass Consumer Communications |                                | Computers & Society                          |   |
| 2 p.m.  |   | Energy & Micros                |  | Systems & Peripherals for Education         |
| 3 p.m.  |   |                                | Musical Micros                               |   |
| 3:30    |   |                                |  |   |
| 4 p.m.  | Low-Cost Business Software--The Osborne Approach      |                                |  | Computer Using Educators Panel              |
| 4:30    |   | Energy Management & Simulation |  |   |
| 5 p.m.  |   |                                | Micro Applications (Part I)                  |   |
| 5:30    |   |                                |  |   |
| 6 p.m.  | Alpha Micro Users Society (AMUS)                      | East Bay TRS-80 Users Group    | Processor Technology Users Society (PROTEUS) | Computer-Using Educators (CUE)              |
| 7 p.m.  |   |                                |  |   |

## Byte's Motion for an Injunction Denied by U.S. District Court

In a hearing held in San Jose, California, on March 30, 1979, a U.S. District judge denied a motion by Byte Industries which would have forced Apple Computer to continue its one-year distribution agreement with Byte. The contract is due to run out in May of this year. In the course of the hearing, many of the particulars of the suit, which the parties have been unwilling to discuss, were revealed.

Byte Industries has filed suit against Apple Computer, charging that Apple, among other things, created a conspiracy to boycott Byte Industries. The suit also claims that the sudden termination of the distribution agreement seriously threatens Byte Industries' ability to stay in business. Byte is seeking \$100,000 in compensatory damages and one million dollars in punitive damages.

Byte Industries was seeking a preliminary injunction on the grounds that Apple's sudden termination of the agreement seriously damaged Byte's relations with its customers. Byte, which distributes a variety of microcomputer products, including the Apple line, to independent retailers, has charged that Apple told Byte's customers that they would not be able to get deliveries from Byte, even though Apple was, at the time, delivering large quantities to Byte. In fact, Byte claims that 150 units were delivered the day after they were notified that the agreement would be terminated February 28.

Apple contends that Byte Industries approached Apple in April, 1978, saying that they were planning to set up

a franchise chain of retailers. Attorneys for Apple argued that Apple entered into the agreement on the basis of what Byte Industries' Chris Lundberg said Byte was going to do. Apple retained the right to terminate the agreement if they, at their discretion, were dissatisfied with the arrangement. Apple further contends that they were later notified by Lundberg that he was resigning from Byte and that Byte had changed its mind about the franchise plan, opting instead to open a chain of dealerships.

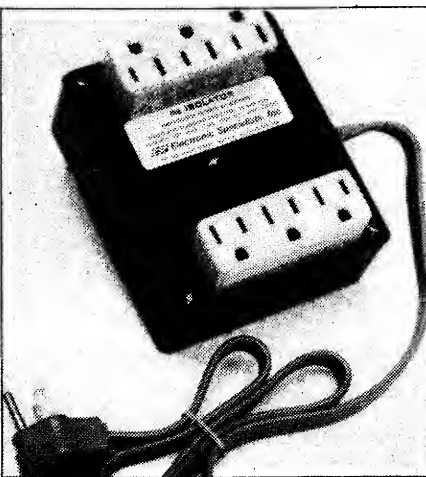
At this point, according to Apple, Byte Industries was told that the arrangement was not working. At the same time, Gene Carter, marketing vice president for Apple, was allegedly told by Byte's Dave Pava that Byte Industries would be selling to 15% of their dealers on a cash-in-advance basis, and to the other 85% on a cash-on-delivery basis.

Given the cash flow problems of most retailers, this made the situation look even worse to Apple, and the decision was made to terminate the agreement. Byte Industries was informed of this in mid-February, 1979, but a final shipment of 150 units was made before the agreement ended on February 28. Apple had not, as of the date of the hearing, received payment of \$108,000 for the goods, but expressed willingness to take them back.

After hearing the arguments, the judge denied Byte Industries' motion, and the agreement was ended for all practical purposes. No word has been received from attorneys for Byte Industries as to whether they intend to pursue the case further.

### AC SURGE/NOISE PROTECTION

Electronic Specialists has announced the Model ISO-2 power line isolator which consists of two filtered banks of 3-prong AC sockets (6 sockets total) with integral surge suppression. Each socket bank is filter-isolated both from the other bank and from the AC power line.



Intended for microprocessor systems with limited processor-peripheral interaction problems, the Isolator Model ISO-2 also provides isolation from disruptive and expensive AC power line surges and hash. Applications include precautionary installation to isolate portions of the system, with the entire system isolated from AC power line hazards.

Model ISO-2 connects to the 125 VAC power line with a standard 3-prong plug, and can isolate and protect an 1875 watt total load; each socket bank is capable of isolating a 1000 watt load.

The price is \$49.95. Contact Electronic Specialists, Inc., Box 122, Natick, MA 01760; (617) 655-1532.

### TRADE ASSOCIATION TO MEET DURING COMPUTER FAIRE

The Microcomputer Industry Trade Association (MITA) will hold its first 1979 General Meeting during the 4th West Coast Computer Faire in San Francisco. The meeting will take place in the Civic Auditorium on Friday afternoon, May 11th, beginning at 6 p.m. (immediately following the closing of the exhibits).

The meeting is open to all members and prospective members - anyone in the management of any company addressing the micro-computing industry. This includes manufacturers, distributors, retailers, software houses, publishers, show organizers, etc.

### RUMOR ABOUT THAT ELUSIVE HP PERSONAL COMPUTER

A vague but persistent rumor that Hewlett-Packard is planning to introduce a "domestic" computer in the near future has refused to go away completely. Now, the news that they were planning on naming the machine "Capricorn" really Taurus up when we heard it. Are they Lion or telling the truth?

If it's really called "Capricorn," maybe it's an attempt to get TI's goat. At any rate, it should have plenty of RAM.

If it happens, look for an introduction around late December or early January. . . probably will have parity rising. No word has been heard about how much it will take to Aquar one, but once they get rolling Libral quantities should be available.

One nagging fear, however, is that HP might just decide to replace the RETURN key with an ENTER button.

## Light Sculpture

(continued from page 1)

generated, but rather are a composition which was carefully entered into the computer.

Milton got the idea for the sculpture in 1973BA (before Altair). His first work - *Spines* - was intended to capture the way in which external stimuli are reflected in the nervous system. He thought of the moving lights as representing the sensations playing across the body.

After building part of the first sculpture, he realized that he needed precise control over the temporal pattern of the lights. Therefore, he contracted with a friend to design and build a complete computer system as well as a set of drivers for 240 twelve volt lights. Fortunately, the invention of the Altair saved that project from almost certain failure.

By 1977, the computer was working, and a number of performances had been written for the original sculpture. Each performance consisted of several thousand time steps, laboriously entered into the computer and then saved on cassette tape. In total, there were perhaps as many as 500,000 pattern elements in the compositions.

The original software was written in a modified version of Tiny Basic, with some assembly language drivers. As the complexity of the sculpture increased,

### DOE SEEKS STUDENT COMMENT ON SPS

Platforms in space beaming power to an energy-hungry Earth? This possibility is now being evaluated by the Department of Energy (DOE) and the National Aeronautics and Space Administration (NASA), in a three-year effort to understand the technical feasibility, economic practicality, and social and environmental acceptability of Satellite Power Systems (SPS).

Members of the college and university community will be able to present their ideas and opinions on this potential energy source through a DOE contract received by the Forum for the Advancement of Students in Science and Technology (FASST).

The FASST-sponsored "Public Review Program" seeks student comment on issues related to the societal and environmental assessment of the SPS. Individuals in the Forum's network of students and teachers will receive summaries of 20 DOE/NASA-sponsored studies which include evaluating the impact of SPS on land use, federal involvement, regulatory impact, international agreements, organizational structures, military implications, biological effects, centralization/decentralization of power distribution, and public acceptance.

Those who receive the summaries will be requested to respond to the Forum with their comments. The Forum will then catalog the responses and forward this information to DOE as part of the SPS Public Review process.

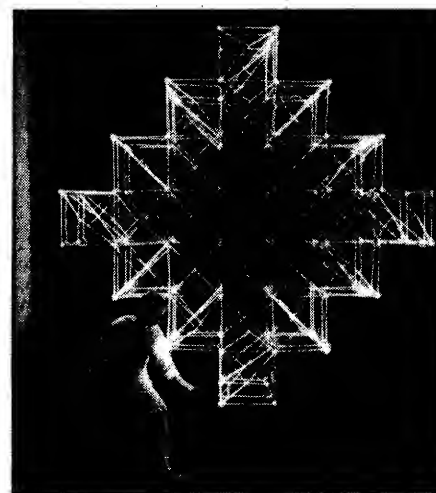
The Program also calls for the creation of a feedback mechanism to enable DOE to respond to the comments and questions from the academic community.

Students and faculty interested in participating in the Public Review Program should contact the national office of the Forum, FASST, 2030 M St, NW, No. 402, Washington DC 20036; (202)466-3860

the limitations of Basic became all too apparent.

Mike O'Malley, president of Berkeley Systems Works, offered to design some new software which could define more complex temporal patterns. He decided to use the Forth Language because it was fast, could support the necessary data structures, and was interactive. It also proved to be easy to debug and well-suited to rapid program development.

The main reason that Mike chose Forth over compiler languages such as Pascal, however, was that he wanted a system that did not tie the user into a limited, rigid structure. Normally, the systems programmer limits the application programmer who, in turn, very severely limits the user. The user, no matter how smart or experienced, cannot modify or extend the system. No wonder people find computers rigid.



In Forth, however it is possible to write a highly specialized application program and still provide the user with full access to the computer. Thus, as the user learns more about the system, he or she is able to personalize, modify, or even extend the system.

The Forth system is now in operation on a SOL and has been used to write two new compositions for the sculptures. Mike reports that Forth seems to be living up to its advance notice. He and Milton have extensive plans for elaborations on the system, especially in the area of interaction with viewers.

Milton's insistence that he doesn't do computer art comes from his feeling that a computer is just a tool - an extension of ourselves. "Computers help me express what is human. Art must have an emotional content. Often computer art is just the realization of a mathematical equation or of a random pattern generator."

"Furthermore, computers are inherently dynamic and unbounded. A lot of computer art is either static or just appears on the face of a tiny TV set." Milton's 30 by 20 by 10 foot sculpture is certainly not tiny.

### Computer Retailers' Association

The Computer Retailers' Association will hold its annual meeting of members at the National Computer Conference in New York on Tuesday, June 5, 2:30 - 4:30 p.m., at the Sheraton Centre in the Regency Ballroom. All stores are invited to attend.

There will be an extensive Personal Computing Show (139 booths) at the Sheraton Centre (formerly Americana), Tuesday, June 5 through Thursday, June 7. There will be some program sessions on Monday, June 4, and the NCC sessions and exhibits open Monday, June 4.



# Micros in the Schools: Teaching With/About Computers

## Golden Egg In Schools

David M. Stone will give fellow educators some guidelines on how to select the right hardware and software for computer assisted instruction in "The Golden Egg's Hardware and Software in Our Schools."

Several groups of educators have developed lists of criteria for hardware/software selection, which the speaker will summarize. He will also address concerns such as flexibility, expandability, and programming-language characteristics.

## School Computer Funding

Before a teacher can address the problems of *using* a computer in the classroom, he/she must solve the problem of *getting* a computer in the classroom. That means convincing administrators that the machine is useful, and finding a way to fund the purchase.

In "Getting Started . . . Preparing a Rationale and Getting Funds," Flora Russ, of Berkeley's King Junior High School, will discuss this problem. She will not only give her listeners ammunition for their pro-computer arguments, but will name many sources of information on funding and fund-getting strategy.

## Pep Talk for Educators

In "Pep Talk for Educators," Robert S. Jaquiss will introduce some questions of concern to people involved with computers in education, including: What do you want to do with your computer? What does the word "computer" mean to you? And, what must your computer be able to do to be really usable in your situation?

The speaker is a teacher at North Salem High School in Salem, Oregon. He is co-chairman of the Task Groups on computer acquisition and on education for the handicapped of ES<sup>3</sup> (the Association for Computing Machinery's Elementary and Secondary School Subcommittee). Two of his purposes in speaking are to generate interest in ES<sup>3</sup>, and to get feedback on other educators' interests and concerns.

## Small Computer in Physics Lectures

Loren W. Wright will discuss "A Small Computer as an Aid to Physics Lectures."

The Berkeley Physics Department began by hooking a Commodore PET into laboratory instruments to relay digital meter readings to a large TV monitor for use in lecture demonstrations. Later, the department added several programs to process instrumentation data and to display it in various other ways — through Fourier analysis, plotting, and a solution to a complex DC circuit using Kirchhoff's Laws.

The speaker is an instructional technician in the Physics Department at the University of California, Berkeley.

## Low-Cost Audio

Dr. Edward K. Crossman, of Utah State University, Department of Psychology, will present a paper entitled "Adding Low-Cost Audio to Your Micro for CAI." Dr. Crossman will offer this solution to the problem of a \$300 speech synthesizer's being too expensive: add a computer-controlled audio cassette player to your system, and use it to play back recorded messages!

Low-cost audio response makes it easier to write a computer-aided instruction program that holds a learner's interest and so teaches effectively, Dr. Crossman believes. It can be used with low-cost systems such as the TRS-80, PET, and Apple.

## Dallas CAI

The Dallas, Texas, school system has an extensive language-arts program for students whose English skills are inadequate. M. William Dunklau of the Dallas Independent School District will describe one aspect of this system in "Voice Synthesis for Early Elementary Computer-Assisted Instruction."

The Dallas system is built around a PDP-11/34 with Hazeltine display terminals and Votrax voice synthesizers, which operate in both English and Spanish. The system adjusts the difficulty of the lessons to each student's level of understanding. It also keeps a record of how each student responds to each instructional program, and prints reports detailing both how well each student is learning, and how each program is teaching.

## Petpilot

David Gomberg and Martin Kamp have developed a full standard implementation of Pilot that runs on a Commodore PET. Pilot is a language widely used for writing computer aided instruction (CAI) programs; now it can be used on a small computer that sells for about \$800.

In "PETPilot Project — Full Standard Pilot (73) for a Minimum Cost Machine," the developers of the language will discuss its characteristics, and will tell how copies of the processor will be distributed.

## TRS-80 Network in Schools

In "Networking with Several TRS-80's In Schools: Extending Your Resources on a Shoestring," Melvin L. Zeddies will describe a public school computing network he developed with several TRS-80's and one disk.

The network permits the user of any TRS-80 to 'load' a program from the disk by first loading it into the master system (which controls the disk), then transferring it from memory on the master system to memory on his own. The master system thinks it's saving the program on tape; the receiving system thinks it's loading from tape.

## Math Classroom

Christopher L. Morgan and Marvin Winzenread will speak on "Microcomputers in the Mathematics Classroom — What's Here Now." The speakers are members of the mathematics department at California State University at Hayward. They will discuss a number of applications they have developed for a personal computer in teacher training. Some of the applications are: familiarizing students with the concept of a function through interactive guessing games; plotting a user-specified function to give the students a feel for the behavior of various functions; and simulating dice-rolling as an introduction to probability theory.

## Personal Computers in the Teaching of College Physics

Professor Leroy T. Kerth will discuss "Use of a Personal Computer in the Teaching of Physics at the College Level."

Professor Kerth uses personal computers as teaching tools to help students understand certain principles of mathematics and physics which are hard to demonstrate through other media. For example, the concept of a Fourier series may be illustrated effectively by letting a student define an arbitrary series and see the computer plot the resulting function through progressively larger numbers of terms.

Professor Kerth will discuss some of the teaching applications he has developed for personal computers; the system requirements for a machine to be used in that way; and the experiences he has had in using computers as teaching tools.

## The Computer and the College Student

In "The Computer and the College Student," Christopher Espinosa will give a first-hand account of what it's like to live in a college dormitory room with a computer in the closet. He will describe some of the uses he and his neighbors have found for the machine in study, work, and play, and some tricks he has found to make it more useful and accessible.

## U.C. Berkeley Offers Computer Ed Course in Conjunction with the 4th West Coast Computer Faire

The following is a description of a two-unit, university-credit workshop/course being offered by the University of California at Berkeley Extension Division.

### COMPUTERS FOR EDUCATION X 402B (2)

The Fourth West Coast Computer Faire will be held May 10-13 in San Francisco. This national conference deals with home/personal computers that are available for under \$1,000, and it provides an opportunity for interested persons to examine the computer systems currently being marketed. The eventual impact of these computers in the nation's schools cannot be underestimated.

In connection with the Faire's conference section "Personal Computers in Education," University Extension is offering this course, which explores the educational and classroom applications of low-cost, home/personal computers. Topics include: survey of present classroom computing activities; comparison of available low-cost computing hardware and software; computer kit building at home or at school; and sources of materials that can be used with a computer.

LEROY FINKEL, M.A., teacher of computer science, San Carlos High School and De Anza College

San Francisco: pre-session, Thurs., May 10, 7-10 p.m.; intra-session, Fri., May 11, 6-9 p.m.; post-session, Sun., May 13, 5-7 p.m.; \$75, includes instructional material and admission to the Computer Faire (edp 016626P).

The course will meet in San Francisco, at the U.C. Extension Center, and in the Civic Auditorium. For more information and registration, contact:

Bonnie Stiles  
University Extension  
University of California  
Berkeley, CA 94720  
(415) 642-1171.

## Marin Computer Center

David and Annie Fox of the Marin Computer Center will discuss their efforts to help people "Learning to Live With Computers," and the philosophy that motivated them to organize the Center.

The Marin Computer Center is a non-profit, educational corporation, established in San Rafael, California, in 1976. It is a place where people can become familiar with computers in a non-threatening environment, "allowing them to experience power and self-respect in relation to machines."

## COMPUTER EDUCATORS

Organize a field trip  
to the

## 4TH WEST COAST COMPUTER FAIRE

being held

May 11 - 12 - 13, 1979  
Fri Sat Sun  
9am-6pm 9am-6pm Noon-5

in

San Francisco's Civic Auditorium & Brooks Hall

*Preregistration discounts available to groups*

# FORTH Language to Get Prominent Billing at Fourth Faire

## Introduction To Forth

In "Introduction to Forth," David Boulton of the Forth Interest Group will discuss the characteristics and advantages of this programming language, which is available on a number of small computer systems. He will provide further sources of information, including several books on Forth and the activities of the Forth Interest Group at Box 1105, San Carlos, CA 94070

## Multitasking Forth

A multitasking version of the Forth language processor, named Urth, is now running on a variety of small computers, including the LSI-11, 808, and HP-2100. Larence P. Forsley will describe it in "Forth Multitasking in Urth." He will describe the multitasking facility of Urth, describe its implementation, and tell where further information about Urth may be found.

## Forth Extension Process Control

W. Andrew Wright will speak on "ARPS: A Forth Extension for Process Control."

ARPS is a superset of Forth implemented for the 8080 and Z-80. It is fast, supports multitasking, and can be stored in ROM.

The speaker will review the development of process control languages (beginning with Fortran), and explain the needs that led him to develop ARPS. Then he will describe ARPS itself, emphasizing the things that distinguish it from other Forth systems.

## Forth Standards

In "The Forth International Standards Team," John S. James will describe the activities and plans of the team which is developing source-language standards for the Forth programming system. Forth is a high-level, concise, extensible programming system (compiler, interpreter, and operating system) readily implemented on microcomputers.

## Forth Interest Group

Forth is a programming language system which can be implemented readily on microcomputers, and which offers a very elegant, high-level means of expressing solutions to a wide range of problems.

A major feature of Forth is that user-defined operators (procedures, functions, or commands) can be used just as though they were primitives. This makes the language truly extensible. Extensions may be added at the user-program level, or at the Forth-interpreter level.

Kim Harris of the Forth Interest Group will discuss "Extensibility with Forth," and will demonstrate the language on a live computer system with TV monitors for the audience.

## Forth Implementation Efforts

In "Forth Implementation, A Team Approach," William F. Ragsdale will discuss a novel and successful way of organizing a software development team. He recently used this organization on a Forth implementation project which he co-ordinated.

The objective of the Forth Implementation Team (FIT) was to implement compatible Forth compiler-interpreter systems simultaneously on eight different microprocessors. The team consisted of eight implementors who were familiar with the eight target machines, two instructors who were familiar with Forth, and a librarian. The instructors established and enforced standards for the software; each implementor developed the software on one of the target machines.

# PASCAL: An Aggressive Young Language on the Way Up

## Pascal Microengine

Tom Pitman will critique an unusual new microcomputer in "A User Looks at the Western Digital Pascal Microengine."

The Pascal Microengine is a computer that is microcoded to execute a machine language very similar to the machine-independent intermediate code (P-code) generated by a Pascal compiler. In other words, its 'assembler language' is Pascal.

Among the topics the speaker will discuss are the Pascal Microengine's execution speed, ease of operation, conformity to proposed language standards, documentation, and quirks. The bottom-line question will be: is the system worth what it costs?

## Pascal Is Rolling

In "Pascal is Rolling," Jack C. Sharp will discuss the programming language that is exciting more interest than any other recently introduced for small computers.

The speaker will begin with a brief description and history of Pascal; then, he will review some of the small-computer implementations that are available, discuss the efficiency of Pascal implementations, and point out several sources of information for programmers interested in pursuing the subject.

## Pascal Standard

In "X3J9 - The Midwifing of a Standard," Marie Walter will describe the American National Standards Institute's current project of drafting a Pascal standard. She will also distribute an annotated bibliography of books about Pascal that are currently in print.

# FOURTH WEST COAST COMPUTER FAIRE

May 11 - 12 - 13, 1979  
9am-6pm 9am-6pm Noon-5pm

## REQUEST FOR HOTEL RESERVATIONS

### MAIL TO:

WCCF Housing Bureau  
S.F. Convention & Visitors' Bureau  
1390 Market St., Room 260  
San Francisco CA 94102

### CANCELLATION:

To cancel your reservation, notify the Housing Bureau up to 15 days prior to the reservation date. Within the last 15 days, notify the hotel. All other changes must also be made directly with the hotel.

### NOTE:

Reservations will not be held after 6 p.m. unless a later arrival time has been requested, and the hotel has been notified.

|  | SINGLE                 | DOUBLE<br>(double or twin beds) | SUITE<br>(parlor & 1 bedrm) | SUITE<br>(parlor & 2 bedrms) | EXTRA PERSON<br>IN A ROOM |
|--|------------------------|---------------------------------|-----------------------------|------------------------------|---------------------------|
| Jack Tar (HQS HOTEL)                                 | \$42                   | \$49                            | \$100-\$200                 |                              | \$12                      |
| Holiday Inn/<br>Civic Center                         | \$37                   | \$45                            |                             |                              | \$8                       |
| PSA San Franciscan<br>Holiday Inn/<br>Golden Gateway | \$30-\$40<br>\$40-\$50 | \$34-\$44<br>\$48-\$58          | \$75-\$85<br>\$98-\$108     | \$95-\$105                   | \$5<br>\$8                |

Rates are subject to an 8% hotel tax.

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| 2nd _____ | Double _____                   | \$ _____ | rate is not avail- |
| 3rd _____ | Twin _____                     | \$ _____ | able, the next     |
|           | Suite, 1-Bedrm _____           | \$ _____ | higher rate will   |
|           | Suite, 2-Bedrm _____           | \$ _____ | be assigned.)      |

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COMPANY \_\_\_\_\_ PHONE (\_\_\_\_) \_\_\_\_\_  
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You will receive confirmations from the Housing Bureau.

Do not send payment to the Housing Bureau.

Instructions for deposits, when required, will be shown on your confirmation.

## Good Connection in San Francisco

If you're heading for San Francisco, you should jot this down: (415) 391-2000.

Last year, 168,000 people dialed it for a daily rundown on local doings.

The voice at the other end provides a two-minute summary of special events, cultural happenings, sports highlights, and sightseeing tips - 'round-the-clock.

## For Micros: Stimulating Simulations

### Micros & Architecture

In "Of Microcomputers and Architecture," Thomas Tollefsen will discuss the prospects for computer-aided design in the architect's office, primarily (but not necessarily) with microcomputers. He will suggest some of the needs such software could fill, the requirements it would have to meet, and the forms it might take.

### Building Thermal Simulation

In "CALOR: A microcomputer Simulation of Building Thermal Performance," Thomas Tollefsen will describe a program that simulates heating/cooling requirements for small buildings such as houses. The program is small enough to run on a personal computer, and takes into account thermal differences (e.g., changes in outside air temperature, radiation differences as the sun rises and sets), making it much more accurate than the steady-state techniques traditionally used for non-computer simulations.

### Radionavigation

Robert G. Huenemann will give a presentation entitled, "Low Cost Simulations of VOR and ILS Radionavigation Systems."

By running simulation programs on a small computer, the speaker has found that aeronautic radionavigation instruments using digital sampling would be more accurate than current analog instruments. He is now developing digital navigation equipment along the lines of his simulation

The following stores are offering pre-registrations for \$7 as an alternative to waiting in line at the Faire to purchase them for \$9. We recommend that before visiting one of these stores, you call and confirm that their supply of pre-registrations has not been depleted.

Data Domain of Schaumburg  
1612 E. Algonquin Rd.  
Schaumburg, IL 60195  
(312) 397-8700

Personal Computer Center  
3819 W. 95th St.  
Overland Park, KS 66206  
(913) 649-5942

### Distributed Processing With Micros

Herb Siegel, of Action Computer Enterprise, will describe his company's Discovery Series A™ in "A Distributed Micro Processor System." The Discovery Series A consists of a central computer which manages shared resources (printer and disk), and a group of terminal/computer 'user stations,' each dedicated to one user. Thus, the system combines the dedicated-processor benefits of a personal computer with the economical shared use of expensive resources offered by a timesharing system.

Discovery Series A uses an 8080 or Z-80 CPU in each user station, with an S-100 bus and an extension of Digital Research's CP/M operating system.

### PASTORE'S TRUTHS

1. Even paranoids have enemies.
2. This job is marginally better than daytime TV.
3. On alcohol: four is one more than more than enough.

## Stores Carry 4th Faire Pre-Registration

Computer Shop, Inc.  
835 Main Ave, No. 206  
Durango, CO 81301  
(303) 259-0722

Sunshine Computer Co.  
20710 S. Leapwood Ave.  
Carson, CA 90746  
(213) 327-2118

Tech-Mart\*  
367 Bird Rock Ave.  
La Jolla, CA 92037  
(714) 459-2797

Byte Shop of San Diego  
8038 Clairmont Mesa Blvd.  
San Diego, CA 92111  
(714) 565-8008

Computerland  
289 E. Highland  
San Bernardino, CA 92404  
(714) 338-5075

Byte Shop-San Luis Obispo  
986 Monterey St.  
San Luis Obispo, CA 93401  
(805) 543-9310

Electric Brain  
3038 N. Cedar Ave.  
Fresno, CA 93703  
(209) 227-5843

Computerland of Belmont\*  
1625 A El Camino Real  
Belmont, CA 94002  
(415) 595-4232

Computerland of Los Altos\*  
4546 El Camino Real  
Los Altos, CA 94022  
(415) 941-8154

Kepler's Books & Magazines  
825 El Camino Real  
Menlo Park, CA 94025  
(415) 854-0509

Digital Deli  
80 W. El Camino Real  
Mountain View, CA 94040  
(415) 961-2670

Computer Plus  
1324 S. Mary Ave.  
Sunnyvale, CA 94087  
(408) 735-1199

Computerland of San Francisco  
117 Fremont St.  
San Francisco, CA 94105  
(415) 546-1592

Byte Shop of San Francisco  
475 Sacramento  
San Francisco, CA 94111  
(415) 434-2983

AIDS, Inc.\*  
301 Balboa  
San Francisco, CA 94118  
(415) 221-8500

Byte Shop of San Francisco\*  
4014 Geary Blvd.  
San Francisco, CA 94118  
(415) 387-2513

Byte of Palo Alto\*  
2233 El Camino Real  
Palo Alto, CA 94306  
(415) 327-8080

Radio Shack  
441 S. El Camino Real No. 201  
San Mateo, CA 94402

Computerland of El Cerrito\*  
11074 San Pablo Ave.  
El Cerrito, CA 94530  
(415) 524-6816

PC Computers  
10166 San Pablo Ave.  
El Cerrito, CA 94530  
(415) 527-6657

Byte Shop of Hayward\*  
1122 B St.  
Hayward, CA 94541  
(415) 537-byte

Computerland of Hayward\*  
22634 Foothill Blvd.  
Hayward, CA 94541  
(415) 538-8080

Computerland of Dublin\*  
6743 Dublin Blvd.  
Dublin, CA 94566  
(415) 828-8090

MicroSun Computer Center\*  
2989 N. Main St.  
Walnut Creek, CA 94596  
(415) 933-6252

Computerland of Walnut Creek  
1815 Ygnacio Valley Rd.  
Walnut Creek, CA 94598  
(415) 935-6502

The Computer Store (Napa Valley)\*  
6526 Washington  
Yountville, CA 94599  
(707) 944-8885

Mr. Calculator  
2521 Durant  
Berkeley, CA 94704  
(415) 848-5629

Computer Demo Room of San Rafael\*  
509-B Francisco Blvd.  
San Rafael, CA 94901  
(415) 457-9311

Marin Computer Center  
70 Skyview Terrace, No. 301  
San Rafael, CA 94903  
(415) 892-6846

Micro Byte Computer\*  
2626 Union Ave.  
San Jose, CA 95125  
(408) 377-4685

Santa Rosa Computer Center  
604 7th St.  
Santa Rosa, CA 95404  
(707) 528-6480

Byte Shop  
6041 Greenback Lane  
Citrus Heights, CA 95610  
(916) 961-2983

Computer Store of Corvallis  
2015 NW Circle  
Corvallis, CA 97330  
(503) 754-0811

Omega Northwest  
839 106th Ave. NE  
Bellevue, WA 98004  
(206) 455-2748

Mr. Calculator  
55 Third St.  
San Francisco, CA 94103  
(415) 543-1541

\*These stores will accept mail-order requests for pre-registrations if your check or money order is accompanied by a stamped, self-addressed, business-size envelope. Please note that Computer Faire will be making NO individual pre-registration sales.



A scene from San Francisco's First West Coast Computer Faire



# Micros to Monsters: A Panoply of Hardware Topics

## Bottom-up Design

Chuck Hastings will speak on "Bottom-up Design With LSI and MSI Components."

The top-down method of design — starting with a problem and solving it on successively greater levels of detail — has become received wisdom for the development of software. It doesn't work well for hardware, Hastings argues, because only pure, miraculous chance can make the resulting lowest-level design correspond to a set of components that are available off-the-shelf.

The speaker will discuss the advantages and methods of bottom-up hardware design.

## Hardware Reduces Software Cost

Many forces are working to reduce the cost of computer software development. In "Microcomputer Hardware Development to Reduce Software Cost," Ian LeMair will discuss one such force as it applies to microcomputer systems.

Some topics the speaker will address are fitting the instruction set to the task; putting software building blocks (programs or subprograms) in ROM; and supporting re-entrant and position-independent code.

## Cassette Tape

Ron Troxell, of Microsette Company will moderate a panel discussion on "Microcomputer Cassette Tape — Problems and Solutions." The panel members will be representatives of major microcomputer manufacturers using cassette tapes for program storage, including Radio Shack, Commodore, and Apple.

Topics of discussion will include the recording formats various manufacturers have selected; effective error recovery procedures; and the state of the art in cassette duplication. There will be a question-and-answer period at the end.

## Auxiliary Processor

In the course of designing an interface board for a music generator, Allen Heaberlin discovered that he was inventing a low-power microprocessor. He replaced the card with a Z-80, and will describe the results in "Auxiliary Processor for S-100."

The auxiliary processor is, effectively, a device controller, acting as a subsidiary to a master microcomputer on the same bus. Because of its programmability, it is more powerful and flexible than a conventional (non-programmable) controller would be.

## Upward Compatibility

Any approach to enhancing processor design inflicts some kind of pain on some people. Minimizing the pain and distributing it 'fairly' involves a lot of engineering, programming, marketing, and political trade-offs.

In "Upward Compatibility: More Power — Less Pain," Terry Ritter of Motorola will discuss his processor enhancement philosophy, and explain how it influenced the design of the Motorola 6809 (a follow-on to the 6800). Then he will survey the language processors being designed for the 6809, paying particular attention to its effect on users' existing programs written in Basic or assembler.

## Small & Large Computers

Stephen Freiburger will review the differences between mainframe and micro computers for the folks who know mainframes and want to learn about micros. He will discuss a number of typical statistics, such as instruction set size, memory size, disk capacity, and cost. He will illustrate the differences by comparing two specific machines: Digital Equipment Corporation's DECsystem-20 and its DECstation-78, a microcomputer terminal.

## S-100 Standard

George Morrow, founder of Thinker Toys and a member of the IEEE S-100 bus standards committee, will discuss the proposed S-100 standard in a talk at the Fourth West Coast Computer Faire.

The IEEE subcommittee has been working on an S-100 standard for about one and one-half years. The proposed standard incorporates several improvements, as well as clarifies 'grey areas,' it is nearly ready for review and approval, and is being circulated in (preliminary) printed form.

The speaker will discuss the work of the standards committee and the features of the proposed standard, and will invite questions and comments from the audience, at any level of technicality. CDP, will warn attendees at the Fourth West Coast Computer Faire. Voltage transients from inductive devices such as refrigerators, air conditioners, and typewriters can go through your power supply and play hob with your machine's delicate innards. Some protective devices, their virtues and limitations — and costs — will be discussed.

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